

FARMER'S ADVOCATE

AND HOME MAGAZINE.

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The Farmer's Advocate

—AND—
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THE EXHIBITION NUMBER
 OF
THE FARMER'S ADVOCATE
 AND
Home Magazine

Will be issued as usual on or about the 15th of September next.

This number is the cheapest, best and now most popular advertising medium of the season. Has no rival and commands the attention of our most enterprising manufacturers, seedsmen, breeders, and the public generally. Send for a circular.

Crop Prospects—Harvesting.

The late sown spring crops have grown rapidly since the rain of last month. There was danger that the straw would be short, had the dry weather continued, but the rain flushed up the growth, and the straw is a good average length. Sufficient rain has fallen to keep the ground moist until the grain is reaped, as it covers the ground so thoroughly that the rays of the sun will scarcely have any effect in drying the ground up. What farmers want now is dry weather, and all will be right.

HAY.

There has been a quantity of hay spoiled. In unsettled weather, especially, very little should be cut at once, and that put in large cocks as soon as possible. It is not generally known, but it is nevertheless true, that hay will cure in the cock if thrown in almost in a green state; and it is further contended that hay made in this way is superior to any other, being juicier and containing more saccharine matter. What spoils hay, whether it is sun or rain, is the former drying up the juices,

and the latter, through the oxygen contained in the water, neutralizing these salts. The safest way is to get in hay on the green side. It is a wonder that hay caps are not more generally used amongst our farmers. They can be had at a small cost, and by proper care will last for years. The spoiling of one season's crop would more than pay for the whole. When once on, the hay is as safe as in a stack. Besides their use for hay, they are so constructed that they answer for stooks of grain as well. The old meadows have picked up rapidly during the last two weeks, and fields that only promised a short crop earlier on in the season will produce a fair average yield. There is a plentiful supply of grass in the pastures, and stock of all kinds is looking well. Young cattle and lambs especially are in good condition. Lambs are not in brisk demand, and farmers have hard work to dispose of their surplus at what they consider a paying price. A good number on this account is being kept over until next year, and as feed also is likely to be plentiful the coming winter.

THE WHEAT HARVEST

progressed slowly. A great number allowed their grain to get dead ripe before attempting to cut. In some places the straw, with the excessive heat, was so brittle that the binding had to be left until the dew fell in the evening before it could be bound. It is exceedingly bad policy to leave grain to the last before cutting. If possible, all kinds of grain, wheat especially, should be cut on the green side; it does not shell in cutting and binding, and besides, the sample is better, the grain is plumper and has a brighter appearance. The majority were at least one week behind with their wheat. The hot weather rushed it ahead so rapidly that farmers were only nicely into their haying when the wheat and barley were ripe. Farmers have sadly miscalculated the amount of hired help they required, and have not provided in time for the emergency, and the consequence is they have not hands enough to keep the machines going.

The Hessian fly has been working slightly, but not sufficient to do any noticeable damage. However, in the fall a large hatch may be expected. In some of the neighboring States it has done considerable injury this year, and we may expect it with us soon. The weevil also has made its appearance, but not sufficiently to create any alarm. It may, however, work in the wheat after it is threshed and in the granary, and it would be well if large stores of wheat should be constantly watched.

All kinds of wheat have done very well this season, and it is a difficult matter at present to say which variety in every respect leads. The Clawson has again turned out an excellent crop, and will compare most favorably in all districts with the other kinds of fall wheat. Its appearance is most showy, ripens early and is hardy. Some complaints have come in from different points that

it has rusted and shrunk, but this is exceptional and may generally be accounted for.

The Silver Chaff was extensively sown last fall and has fully realized our expectations, and is a very plump grain, hardy and destined to be in great favor with growers and millers.

Arnold's Victor wheat has been sown freely in one or two districts, and some accounts of it will be found in the correspondence department.

The Scott wheat has fully come up to its former excellent reputation as a safe, hardy and large yielder, and has increased greatly in favor with our best farmers. This wheat, known as Red Winter wheat is eagerly sought for in Glasgow, and is preferred to the Treadwell by millers.

The Fultz wheat has again been tested, but our advices are not sufficiently complete this month to speak about it as fully as desired. No doubt this fall a greater breadth of it will be put in.

The Michigan Amber, Diehl, Treadwell and other common kinds have done very well, but are being supplanted by the new varieties and will soon be almost unknown in many parts.

Many have again sown the old varieties and done well. Whilst a change of seed is a matter of profit to farmers, and should be the rule, still when the old friend proves true all are reluctant to part with him for the new variety.

In speaking of old and new varieties, it may be said that a great number of the new introductions are only the same old kinds under a different name, the difference in climate and soil having brought about difference in the plant. There is no doubt that the change in climate and soil has a wonderful effect upon the sterility and yield of different plants. Changing seed from one soil to another is highly desirable.

We may expect at our coming fall shows to see the finest exhibit of wheat ever shown.

MACHINES.

The heavy grain and stout straw has put reaping machines to a severe test, and has fully demonstrated that strength should not be sacrificed to neatness of construction. In the majority of breakages the rake gearing gives out. There is an endless amount of time lost by farmers having their machines and hands idle whilst reapers are being done. The grain all through is bad to handle, from cutting to stacking and mowing. The bulk of straw is necessitating a great amount of stack building, and unless the weather is very dry until they are threshed, a large per cent. of the grain will be damaged. The stacks are thrown together in a hurry, in a slovenly, loose manner, and the first heavy rain that comes will soak into the sheaves. Good grain stackers are scarce in Canada, and if farmers do not want to loose every year a large per cent. of their grain, they must have better barn accommodation or pay more attention to stack building. On the majority of farms of one hundred acres the barn room will be taken by the hay and fall wheat, leaving all the spring grain out of doors. It would certainly pay

if stacks were to remain long out to thatch them, as is the practice in the Old Country. One experienced thatcher could do the work at a small cost on a number of farms, and not only would the work be done, but those who had no knowledge of it could be easily learned, and thus be able in the future to do their own work.

THRESHING.

Active preparations are being made to commence threshing. The majority of farmers will be compelled to thresh early in order to make room for their other grain. There is going to be such a bulk of straw that it will be impossible to get any more than a small part of the crop under cover. Threshers are already spoken for weeks ahead, and no doubt, according to the price per bushel charged, they will have a rich harvest.

CORN

Looks well and a fair acreage has been planted. It is further advanced at the time of writing than has been known for years. It is now in the silky state, and will be ripe early in the fall. According to present appearances, there will be a large yield in this part of Ontario. The large fields sown for a green crop have grown rapidly, and will soon be fit to cut.

ROOTS

Are not doing well as a general thing. The fly has been very destructive and has necessitated a second sowing. There has been no labor in the way of weeding done yet, owing to the rush to get in the harvest and the scarcity of hands. In fact, it is difficult to ascertain what a field of turnips is like owing to the height of weeds; however, there is plenty of time yet for root crops to grow, and they may turn out a good crop.

POTATOES

Are rather poor in places and appear to have been struck with some kind of blight. The stalks suddenly wither and die before they are half matured. Their growth has not been as rapid as other vegetation, notwithstanding they were planted in good season. The bugs have not abated any in their ravages, and are as bad as in any previous year. Farmers have not gone extensively into raising potatoes this year, owing to the glut of last season. The weather on the whole, excepting the excessive heat, has been all that could be desired for harvesting.

FRUIT.

Although last year was what is termed the "off" year for fruit, this year, owing to the frosts and the ravages of caterpillars, is not going to be an "on" one. Taking all parts of Canada, the crop will be far below an average; in a great many cases the crop is as short as that of 1877—in fact, a complete failure. The older orchards have not fully revived from the depletion they underwent last year by the ravages of worms. A great number of trees died from the effects, and those that survived by throwing out a second crop of leaves, were not in a good condition to receive another attack this year. It is invariably the case that old trees that were eaten last year had few blossoms on this spring. We conclude from this that any serious injury done to the tree one year will affect its bearing the next. There are a great number of these old non-bearing orchards through the country which should be supplanted by new trees. Even in the most favorable seasons trees that have been planted forty or fifty years will not yield much fruit. A good number of trees were planted last spring, and they look thriving and healthy. They were bought very low, considering the quality of the stock. But it may be safely said that fruit trees will not be so cheap again for a few years. The scarcity of fruit for two seasons will have a tendency to impress upon the minds of our farmers the value and necessity of a plentiful supply of fruit, and it may be expected there will be a large increase in the number of trees planted.

The Best Time to Plant Trees.

It has been said that there is hardly a farmer in the country that cannot double the value of his property by judicious tree and vine planting, and this cannot be said to have been an over-estimate of the additional value of farms when well timbered. Every year furnishes fresh proof that our farms require shade. The clearing has been in most instances too thorough, and even when a portion of the old forest has been left standing, it is often not so disposed as to afford the greatest protection from frost and storms.

And not only should we spare the old forest trees; we need to plant young trees, and also to plant fruit trees. There has been an increase of late years in the platting of forest trees and orchards, but very much more is needed. And more attention is required to everything connected with this most important matter.

For those who would enhance the value of their grounds by planting, a question of much moment is—What is the best season for planting; is it the fall or spring? And it is well beforehand to decide on the time, as well as the locality for planting, and to be prepared in time. For planting both forest and fruit trees fall and spring have each their advocates, as each time has its advantages and disadvantages.

The great objection to fall planting is the liability of the newly planted trees to be disturbed in the ground by being swayed backward and forward by the winds of the winter and early spring. Such disturbance of trees that are newly planted is frequently the cause of great injury; it prevents the rootlets from taking or keeping the required hold of the soil, and in the cavities formed round the trees by their swaying water often lies. The natural consequence is that the trees perish.

If this disturbance of the roots be prevented by due care in planting, and by securing the young trees by staking, this objection to fall planting will be removed, and then there is much in the favor of this season. The ground is generally drier in the fall than we can expect it to be in spring, and it can be better prepared, so as to be in a more suitable condition when planting, and no little depends on the state of the ground, as well as the careful planting. It should never be done while the ground is wet. The earth round the roots is sure to become cloggy, hard-bound and impervious to air and heat, if labored when wet, and the trees are liable to perish. The ground intended for planting—fruit trees especially—should be plowed in the autumn and re-plowed, and, if necessary, subsoiled. A deep soil is necessary for an orchard—say eighteen inches, in any instance not less than twelve. It should be in good tilth and rich, and no raw, rank manure should be applied when planting; such manure in contact with the trees is sure to kill them. It is well to manure the ground well with the previous crop—a root crop is best—and let the preparation for it be such as we have said, deep and thorough. This cultivation will bring the ground into the best possible tilth for the young orchard. It will insure an early catching of the roots, and a healthy, vigorous growth, without which we cannot expect good fruit-bearing trees.

Spring planting is preferred by many. If it can be done just at the proper time, and the ground be dry and in good tilth, the trees may start growing at once. There is no dead season from the time they are planted till they take root, and send out buds and leaves. If we could not conveniently plant in the fall in well prepared ground, we would plant in spring in preference to another year's delay; but in no case would we plant fruit trees in ground not sufficiently prepared.

Vitality of Seeds.

Farmers need not be told that of the seed sown whatever the variety may be, all do not germinate, and of those that do germinate all do not arrive at maturity. If it were otherwise, we might sow more sparingly than we are in the habit of doing. Were every seed perfect, and all planted at the right depth and the proper distance apart, less seed would suffice. Professor W. J. Beal, Michigan Agricultural College, has reported the testing of nearly fifty samples of clover seed, all fair samples. Fifty seeds of each sample were carefully counted and tested in the greenhouse. Of about one-fourth of the samples, ninety per cent. or a little over sprouted. Of some samples the number that sprouted was very low—of one sample forty-four, and of another twenty four per cent. That a number of the seeds fail is unavoidable. Of all those samples most of them, supposed to be the season's crop, in not one instance did all germinate. Some grains may not have matured and ripened perfectly; some might have been improved by thorough growing; but all were supposed to be good samples. This proves the necessity of planting not merely as many seeds as would give a fair even crop if every individual seed were to germinate and grow, without casualty, to maturity, but also in planting to make allowance for failures that are sure to occur. The farmer's own experience as to how much seed is really necessary to produce the best results on his land is the proper guide, a strict rule not being applicable to all farms alike.

Statistics of English Farming.

We have repeatedly had from American writers on agriculture most favorable descriptions of English farming and of the fertility of the soil. The produce of English farms has been the subject of many communications to the agricultural press; and now we have an article from a periodical, the *Shipping List*, of an opposite character. The writer says: "It is apparent that the fertility of the English soil is rapidly decreasing, a fact substantiated by the crop returns of the last ten years, as published in the *Mark Lane Express*." Is it not strange that we have such a difference of opinion on a subject that must be plain to all who would make themselves acquainted with it? Is there nothing definite in agriculture—nothing reliable in the judgments formed by shrewd, practical men on a subject with which they are well conversant?

Little more than ten years ago a well known English agricultural writer, a good authority on everything connected with farming, said: "Fertility has been increased by the operation of new processes, and of new implements, by the importation and manufacture of new manures, by the cultivation of new plants, and by the maintenance of a large stock of improved animals." And such is the testimony almost invariably borne to modern agriculture in Britain. The means of increasing the fertility of the soil have not decreased within ten years. The employment of new processes and new implements has not ceased, the importation and manufacture of new implements have not fallen off. Are we to arrive at the conclusion that these means designed for improvement have had a directly opposite effect, and that high farming with improved stock, new farm implements and the increased application of fertilizers, have caused a rapid decrease of the fertility of the soil? If it be so, then the sooner we return to the old methods, the better.

We cannot believe that a decrease in fertility and in the productive power of the soil have been the consequence of improvement in agriculture. To unfavorable seasons, which we know there have

been, we may more reasonably attribute crop returns lower than the average, and a greater accuracy of returns may partially account for them. We know that the agricultural produce of Britain is now far greater than in former times, and we know also that the average yield of wheat there is more than double that of America—nearly thirty bushels to the acre in England, and less than thirteen in the United States.

It is said by old experienced farmers that there are no such good crops raised under the modern system of farming as there were when the summer fallow was part of the regular rotation of the farm—that the bare fallow brought into operation productive powers of the soil that would otherwise have remained dormant. The land, not merely the surface soil, is a vast reservoir of agricultural wealth, of mineral fertilizers, such as are most beneficial to the growing of wheat, clover and many other farm products. If it be "apparent that the fertility of the soil is rapidly decreasing" with our improved agriculture, there is in the land itself the material for its restoration to renovated fertility, if fitting means be used. It is the part of farmers to continue their onward progress in agriculture, taking advantage of every means of improvement, and, if need be, to have recourse at intervals to the old method of fallowing to bring from beneath the surface the hidden stores of additional improvement.

Agricultural Experiments by Mr. Lawes, of Rothamsted, Eng.

The experimental farms of Mr. Lawes have of late been the subject of comment by the agricultural press in America, as well as in England, where they are carried out. The great work of making such experiments, and carrying them on continuously since the year 1834, might well be expected to be the work of a society such as the R. A. S., or of a company organized and endowed by the nation, and not of a private individual. Without any extraneous aid, and relying solely on his own resources, he has prosecuted his researches for nearly half a century. Mr. Lawes has associated with him a man eminently qualified to aid in the experimental work carried on—Dr. J. H. Gilbert, F. R. S., &c. So highly have their labors been estimated that a new laboratory was built for them by public subscription among agriculturists in 1855, and since that period the work carried on and the results attained have made the laboratory and experimental grounds of Rothamsted known to scientists and agriculturists in the New as well as the Old World.

The problem Mr. Lawes proposed to solve was to determine the actual relations of the crops grown on the various farms to the soil and the various manures or fertilizers used to promote their growth, and to do this on a scale of such magnitude, both for area and time, as would settle upon a strong and safe basis the fundamental principles of agricultural practice. For a work so extensive in design and so vast in all its details he has been obliged to have a number of assistants, chemists and others.

The investigations are under two heads: First—Field experiments—those on growing plants, &c.; and, Second—Experiments on animals, &c. We will refer to the field experiments.—To grow some of the most important crops, which were usually grown in rotation, each separately, year after year, for many years in succession on the same land, and to do this (1) without manure, (2) with farm yard manure, and (3) with a great variety of chemical manures; the same manure being, as a rule, applied year after year on the same plot of ground and on the same crops. These experiments have been varied by an actual course of

rotation with different manures. For example, wheat has thus been grown for thirty years in succession on thirteen acres of land, divided into thirty-five plots, and has been varied on other plots with various kinds of wheat, and alternated with fallow for twenty-seven years on one acre in two plots. In like manner for barley, oats, beans, clover, turnips, sugar-beets, mangold wozels and potatoes for various areas and times, as high as thirty-two years in succession and also for like times.

The experiments on permanent meadow or park grass land have been continued over twenty years, and have been attended with instructive and useful results. It is found that in case of the continuous treatment by certain mineral manures only, while the annual average crop for twenty years has risen from twenty-one and a quarter hundred weight of produce per acre, weighted as hay, to sixty-two and a half hundred weight per acre, the number of species of plants has diminished from fifty to about twenty, and these the most useful of the grasses, &c. The land continuously fertilized with mineral manures gave 5½ tons of hay per acre, and the adjacent unmanured gave 2½ tons.

In the wheat field called "Broadbalk" it needs no skill to see the immense disparity between the several plots of grain growing side by side and under treatment for over a quarter of a century by different fertilizers. It is notable that this old field upon the English chalk, left unmanured continuously for the whole period of time of these experiments (there are two such plots upon it), yields an average of 14 bushels of wheat per acre. Fourteen tons per acre of farm-yard manure have raised the average yield of this land from fourteen to thirty-five bushels of wheat to the acre. The experiments with the several fertilizers, separately and combined, showed that a combination of mineral manure with superphosphate of lime and ammoniacal salts is essential to the production of the highest condition of fertility.

[From a report by the special correspondent of the *New York World* the above sketch is in great part abridged.]

Wheat from South Australia.

The importation of breadstuffs to England from every point of the compass is unlimited, and the surprise is that one country can consume the wheat and corn from every continent on the globe, and that country herself being very fertile, and her agriculture unequalled by any other. Americans have not a monopoly of the British market for breadstuffs. The north of Europe sends vast supplies; India exports largely, and from the Pacific vessels discharge their cargoes in the ports of Great Britain. A new field of her grain importation was opened out on June 11th by the arrival of the barque Calden, from Adelaide, South Australia, with a cargo of 6,210 bags of wheat. This is said to be the first grain cargo which has come direct from South Australia to Sunderland. This season's wheat production in South Australia has been extraordinarily abundant, and this has, it appears, induced British merchants to undertake importation from such a great source.

Every such incident is a lesson for Canadian farmers. It is, "line upon line," impressing upon us the policy of no longer making wheat our only agricultural staple. England, the great market for agricultural produce, is abundantly supplied by all nations with breadstuffs, and consequently we may cease to expect the high prices there for wheat. In fact, the steam engine has brought all nations nigh each other, and prices are nearly

equalized in the country where grown and the far off land where they are consumed.

There is a brisk demand for beef in the English market, with paying prices. Meat now sells for more than double the price it commanded thirty years ago. Why then not feed more cattle of such quality as will command the highest prices. Feeding cattle will remunerate the feeders—but it is only feeding well-bred animals, and feeding well.

The Difference Between Drained and Undrained Land.

Be the season wet or dry, the great advantages of underdraining, wherever necessary, is apparent to any one who observes the state of growing crops. The sickly yellow hue of the crops, cereals or others, where surplus water is stagnant in the soil, shows a marked contrast to the healthy dark green of the crops on the land in which no surplus water has been allowed to stagnate. The application of manure can effect this much, but it can never be a substitute for good labor, of which the first and most profitable operation is carrying off the water, which, if allowed to remain, is deleterious to every plant that grows on the soil. Not only is the crop, whether cereals, grasses or roots, much lighter in yield on wet than on dry land; but it is also much inferior in quality.

The *Agricultural Economist*, in his view of "The Month and the Farm," refers graphically to this subject. He says:—"One thing, however, is sufficiently clear: the present year's wheat crop is doomed to be very variable. On cold, wet soils the plant went off so yellow during the wet weather, and still remains so sickly that the best weather cannot now provide a perfect remedy. Never was the difference between drained and undrained lands so marked. In travelling through every district it strikes on the attention most vividly, and the difference in the value of the respective crops would be more than equal to the entire cost of effecting drainage. On the other hand some very good crops of wheat appear on lands of a hungry, gravelly, avid character, which not unfrequently are found suffering at this time from the want of moisture."

These observations will no doubt lead many to open their eyes, that they may see more clearly the difference between neglected farms and those that are properly cultivated.

Notes from my Garden.

EFFECTS OF THE PREVIOUS YEAR.—The injury done to shrubs or trees is not limited to that immediate season, whether the cause of the injury may have been insects or frosts. Last year some currant bushes that were stripped of their leaves by the caterpillar before they were observed have never since been healthy. They were well pruned in the fall and manured, yet in spring they leaved out badly, many of the smaller branches not at all, and they fruited badly, not yielding half a crop. It is a better plan if trees be injured as these were, to grub them and plant others in their stead. If in the same place remove the earth in which the old trees grew and replace it with fresh earth.

COAL ASHES AROUND FRUIT TREES.—I put a deep layer of coal ashes around my plum trees in the fall. The application did not wholly save the fruit from the curculio, though I have a pretty fair crop without having used any other protection. The coal ashes, though it seems not a perfect preventive, I find to be useful, applied as it was, as a mulch, as a fertilizer, and as an aid in fighting the insects.

MILDEW.—This season, for the first time, I

found mildew seriously affecting my plants. A few of my potato plants were affected by it, and young seeding oaks, and then apple trees—the second year of their bearing. Sulphur is recommended as a certain remedy. Not having sulphur at hand I dusted them lightly with air slaked lime, and it has proved to be a perfect remedy, not a trace of the mildew remaining.

The June frost lay heavy on my grape vines, though well shaded from the north. The young tender shoots and tendrils were badly frozen, quite killed. I cut off the frozen parts and the vines have since grown luxuriantly—young wood, rich heavy foliage, and many a cluster of grapes. "Cut them down to the ground" was the advice given to me when they were frozen. There is much enduring vitality in the stem as well as the root of our grape vines. They are like our people, hardy, tenacious of life, and having great power of endurance. The caterpillars, in great numbers, invaded the garden. We swept them in hundreds off our forest and fruit trees, day after day, and killed them. The only injury they caused us was the daily labor of contending with them as long as they remained.

Our Paris Letter.

The Paris Exhibition — The Cattle Show.

ITS MANAGEMENT AND ITS PARTICIPANTS.

12 Boulevard du Temple,
Paris, June 15, '78.

The show of live stock, opened yesterday on the Esplanade of the Invalides, and to be closed this day week, is one of the novelties connected with the exhibition, and is well worth a visit. It is, however, attended with inevitable drawbacks. Expense and risk prevent the despatch of animals from considerable distances, and the peasant farming prevailing in certain countries does not conduce to enterprise in stock-breeding. Hence this cattle show, though a section of the Universal Exhibition, is not universal, not even European, but is French, English and Belgian, with a sprinkling of Dutch, Italian, Swiss, Danish and Portuguese. France has 356 exhibitors, England 145, Belgium 39, Holland 12, Italy 12, Switzerland 9, Denmark 2, and Portugal 1. England is represented by nearly all its eminent breeders, and amply justifies its reputation. Indeed its superiority would have been all the more manifest had the international competition extended over a wider area, and much of the best French stock is the result of crossing with English breeds. A point, moreover, has been made of not allowing French and foreign animals to be pitted against each other. Cattle, sheep and pigs are all divided into two categories, those bred in France and those bred abroad. To the poultry, indeed, no such classification has been applied, and it may be suspected that had the cattle, sheep and pigs of all nations been similarly treated, a still larger proportion of the prizes would have been carried off by Englishmen. France, however, as the country giving the invitation and bestowing the recompenses, had a clear right to lay down its own conditions, and there was, perhaps, a fear that Frenchmen who cultivate foreign breeds would be deterred from exhibiting if they had to compete with the countries where these breeds originated. The show is excellently arranged on the square fronting the Invalides. The cattle are placed in about forty lofty and spacious sheds, with plenty of air and light, but covered in, so that the visitors walking through them are sheltered from the sun and rain. The sheep, pigs and poultry are penned at each extremity, where lines of trees afford protection, and

in the centre is a broad belt of flower beds. There is not the slightest crowding, and all discomfort, both for the public and for the stock, has been avoided. The journey and the heat are nevertheless telling on some of the pigs, whose owners are prudently inviting offers from Paris butchers. Of Dutch oxen there are many large and well-shaped animals, and thirteen miscellaneous northern breeds, a Danish count carrying off several prizes. The Swiss cattle number fifty, and are admirable specimens. Their bells hung up beside them call up reminiscences of pleasant mountain music. Seven individual breeders and two societies—those of the canton of Schwytz and of the Simmenthal—furnish the entire collection. Italian and Portuguese cattle are scantily represented. Turning to the cattle bred in France, attention is first attracted by a choice assortment of Normans, various in form and coloring, but robust, quiet, and producing good milk, as well as good beef. The Flemish is also a well-filled class of cattle, of imposing size, with good heads and level backs, but with narrow flanks and chests. The Charolaise, however, are by far the handsomest of the French breeds, with their white and silky coats, fine heads and cylindrical bodies, though they are not good milkers. The Gascon and Charolaise, Garonnaise, Bazadaise, Pyrenees, Breton, and other native breeds, are likewise seen to advantage. The French Durhams, however, take the lead in the point of numbers, forming an imposing collection; while the crosses between Durhams and various French and other breeds seem in many cases highly successful.

The great attraction in the sheep department is the collection of Merinos, which, being unshorn, are seen to great advantage. The Merino, introduced by the Government from Spain towards the end of the last century, is now widely diffused in France, and has given a great stimulus to the laying down of pastures. Its fleece, form and capacity for fattening, have undergone much modification during the last fifteen years to meet the lower price of wool and the higher price of mutton. The Rambouillet flock, the property of the State, serves as a nursery for French and foreign breeders, the race having been unmixed. Twelve fine sheep from this flock figure in the show, but do not compete, for the Government, as the organizers of the show, could scarcely award itself prizes. French breeders exhibit about 250 Merinos, mostly from the South and South-East. The prize for the best show falls to M. J. Cotton, of the Cote d'Or. M. Lefevre Poisson, of the Loiret, is also one of the most successful exhibitors. In the foreign section there is likewise a Merino class, but it has only a dozen entries, all from Italy, except one or two from Hungary. Had Germany taken part in the Exhibition generally, specimens would doubtless have been sent from some of the German States. French agriculturists have crossed the Merino with several other breeds, and the cross with the Dishley or New Leicester, seems the most successful of these experiments. In poultry, natives and foreigners compete together, without reference to the native soil of the exhibits. Most of the foreign poultry is English, but it fights a losing battle. Thought most of the breeders fighting prominently in English shows enter the lists in this section also, only a few crumbs in the way of prizes fall to them. The French poultry are in general finer, and of higher style.

The show does not draw many visitors, the Exhibition and the Salon presenting superior attractions to most foreigners, especially as the weather is showery. The attendants are chiefly French country people. The shepherds of various nationalities seem on excellent terms, and it is amusing to witness their attempts to converse, or rather to gesticulate, with each other.

PERE.

Veterinary.

Scouring in Calves.

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

When the young animal comes into the world it is called upon to exercise new functions of the most varied kind. Its lungs, hitherto unused, are inflated with air, and the red blood drawn into a new channel, circulates in the almost endless membrane which lines their cells and cavities. The digestive organs, hitherto the torpid and inactive receptacle of the excretions from its own walls, from the liver and pancreas, must take in aliment, secrete the digestive fluids, absorb the elaborated products, and expel the effete matter, in order to sustain their own integrity and that of the system at large. With the skin exposed to the all-unwonted vicissitudes of cold and heat, and too often of dryness and wet, and the lungs compelled to breathe air at all degrees of temperature, tension and aqueous saturation, and with all grades of impurity, it is not to be wondered at that the digestive process is sometimes retarded or rendered imperfect, and that the foundation of serious and fatal disorders is laid.

Perhaps the most common cause of indigestion and scouring during the first week of life is the want of tone and activity in the bowels. These are clogged at birth with tough, yellowish-brown billiary products that have been accumulating for months, and that virtually glue the walls of the intestines together and prevent their natural movements or the passage of anything through them. To remove this nature has provided a first milk—colostrum—rich in albumen and salts, and actively laxative, and if from any cause this is withheld danger can only be obviated by the substitution of some other purge, such as 2ozs. castor oil or magnesia. To make these more effectual and more like nature's laxative they should be given in one-half these doses for several days in accession until the natural activity of the bowels has been established.

Apart from costiveness, other evils may result from improper milk. If the dam is worked or otherwise excited till fevered, the milk is altered in quality, and often proves poisonous to the offspring, and the same may result from diseases of various kinds in the mother, or from supplying her with unsuitable food, the hurtful elements of which pass into the milk, or lead to an altered secretion. Another common cause is giving the meals at too long intervals, so that the calf comes with stomach empty, faint and languid, and loads it with an excess in the shortest possible time, and the simple distention for a time partially paralyzes it, not only in movement but in secretion as well. If to this is added that the milk has been altered by too long retention in the udder, or soured or otherwise decomposed by standing in vessels of questionable purity, we have a combination of evils that too often prove effectual for harm. There is, therefore, always greater danger in bringing up on hand, on cold or on soured milk, though the mere souring, apart from putrid decomposition, may soon beget an accommodating action on the part of the stomach, which will in many cases render it proof against its evil effects. Even this, however, it is well to avoid, and hence the allowance of a couple of tablespoonfuls of lime water with each meal is a valuable precaution when young animals are fed milk from a pail. This substitution of farinaceous gruels for the natural milk is still more reprehensible, and its effects should be watched with the greatest care. Another common cause of direct disorder of the stomach is the pressure of hair-balls that the calves have swallowed while licking themselves or sucking their fellows, and which rolled into firm masses in the fourth stom-

ach entangle a quantity of putrifying milk, and speedily sets up noxious fermentation in whatever is introduced into the stomach. As already suggested, foul air, damp beds and cold exposure are prolific causes of digestive disorder in the young. Finally, the constitution has much to do with the result. Certain breeds of families, of strong constitution and rounded forms, will in the main resist these injurious influences and survive under the worst treatment, while others with narrow, shallow chests, their necks hollow, lengthy flanks and light colored skins, will bear little, but sink under slight exciting causes. Hence, to avoid losses by scouring, we must begin at the beginning, and lay the foundation of a sound constitution, derived from a strong, vigorous race, kept and bred in the most healthy conditions.

A very simple treatment will often be successful if adopted at the outset and accompanied by a removal of all the removable causes of illness, as noticed above. If the sick calf has been put on the milk of a farrow cow he must be put on that of one more recently calved; if that disagrees still another nurse must be sought, and if from any cause the health of the cow fails, or if her bag cakes, let the calf have its supply from a more wholesome source. When the calf is given to rapid drinking this may be partially remedied by fixing an artificial teat in the pail for him to suck while drinking.

As a rule, the stomach should be cleared of its morbid accumulations by a dose of one or two ounces of castor oil and a teaspoonful of laudanum. If the skin or membranes of the mouth, nose or eyes are of a yellowish tint two grains of calomel and twenty grains of chalk may be added and repeated daily for some time. In the absence of the yellow tinge give with each meal a tablespoonful from a bottle of sherry wine in which one-eighth of the fourth stomach of a calf has been steeped for 24 hours. A tablespoonful of tincture of cinnamon, with twenty grains each of chalk and gum arabic, will be an excellent adjunct. Finally, if the abdomen is tense or tender to the touch it should be rubbed over with a thin pulp made of the best ground mustard and tepid water, and covered with a bandage to prevent drying until it has taken effect on the skin.

The Horse.

Summer Management for Horses.

Owners of horses have frequently been disappointed in the unsatisfactory results that have attended the summering of horses which have for many months been kept up at hard work, in hot stables and on highly stimulating food, whose feet and legs have become injured, and whose whole systems were more or less fevered, and which have finally been put out to pasture to alter their mode of life for awhile, and to give them more air, cooler lodgings, with a more natural and less exciting diet. The objections to the ordinary methods of thus attempting to restore the former condition of horses by simply a run of a few months in some scanty hill pasture is, first, the length of time which is required before the horse recovers from such a radical change in his mode of living; next, the probability of his coming up lame from galloping, playing and skylarking with other horses in pastures which, too frequently, the sun has burned and baked as hard and nearly as brown as a turnpike road in July. The grass at this period, in the average pasture, is apt to be poor and innutritive; frequently there is a notable lack of shade and shelter, with a plague of flies sufficient to torture a thin skinned animal almost to death. Finally, the animal often comes up in the fall poorer in flesh than when he was turned out, sunbleached, thin and dry in his coat, his hair staring, his ribs bare, presenting the opposite to what his owner expected, after supplying the means of a summer's run and rest.

Experienced horsemen are now adopting, in lieu

of the above method, especially in the case of valuable horses, the keeping the animals up a part of the time in a large, loose box, if possible, opening to a soft, moist, well-sheltered enclosure fenced off from the main field or pasture; to take off his shoes, stuff his feet with a cooling paste of tar, tallow, clay and cow-dung; to feed regularly and plentifully with rich, succulent, green feed cut fresh every day, not forgetting a few carrots and a standing supply of a few quarts of oats per diem, given part at each of two feedings. If the horse has the advantage of a good paddock or enclosure to run in, he will not need much other exercise; but, at all events, he will be better for being walked out or trotted gently daily on soft ground. The advantages of some such method, varied to suit the conditions and circumstances of the owner are manifold. The animal is not so wholly depleted and reduced; he is not exposed to hot suns, wet nights, cold storms or extraordinary changes of temperature; he is not tormented by flies, has no opportunity of galloping the flesh off his bones or battering his feet to pieces on the hard ground. In short, the horse may have all the advantages of a run at grass, with fewer drawbacks, and when the time comes that it is desired to again bring him into condition, it can be done gradually and almost imperceptibly by decreasing the supply of green food, while increasing that of grain, adding more exercise, putting on extra clothing and keeping the stable warmer. This involves care and attention it is true, but fine animals, kept in good condition, are not the result of careless indifference or shiftless management.—*Cultivator*.

Poultry Yard.

Rats and Poultry.

If all the losses in the poultry yard a farmer in Canada sustains were put together they would not equal the depredations committed by rats on young broods. To such an alarming extent is this destruction carried on from year to year that farmers, comparatively speaking raise no poultry at all. Instead of poultry being a source of profit to our farmers by the way they are kept they are a dead loss. About half of the broods that are hatched are prey of rats. They are generally raised about barns and houses and allowed to run at large where rats have frequent intercourse and they become their ready prey. It should be borne in mind, however, that rats do not destroy chickens, ducklings, or goslings only when they are thrown in their way, or near the rats place of resort, and this onslaught upon poultry broods is sheer necessity or to satisfy the cravings of hunger. At the season of the year when young broods are around the barn yard; the grainaries and barns are depleted of everything in the shape of feed, and rats therefore will eat anything that comes to hand. Naturally rats are not carnivorous, nor will they seek for prey like cats and other animals; so that if young broods are kept away from their haunts in coops or boxes there is no danger of rats hunting for them. A few coops at a small cost, which every farmer could make for himself, would last for years. We were informed by a farmer's wife this spring that the rats in the vicinity of a hog pen, where they had been accustomed to feed from the troughs of the pigs, had become so rapacious that they would attack all kinds of young broods in daylight and people looking at them. The same person had lost nearly all one brood of goslings and fully one half of her chickens. This only one case in hundreds of the destruction going on in our farmers poultry yards with rats.

It is not generally known that heat is as injurious to young broods as severe cold.

Work for August.

This month August is generally taken the most leisurely by fowl keepers of any in the year. The spring chickens are now fairly upon their feet, and are growing nicely, where they have been properly attended to. The hens that have been laying vigorously since January and February, in great part, have about finished their egg-discounting for the time being, and many of them will commence their moult by the middle or last of this month.

As a rule, no more sitters will be used this season. In many breeding-yards the cocks have already been removed from farther present association with the hens, and this may be appropriately designated, among poulterers, as the season "between hay and grass."

Still there is always enough to do, where fowls are kept in any considerable numbers, at any season of the year. It is a good time now to white-wash and purify the hen-house. The old nests may be cleaned out and fumigated to advantage. The roosts should be washed (above and beneath) with kerosene at this time. And by these means the lice, that increase so rapidly in hot weather, may be destroyed on the premises easily and conveniently.

A little carbolic powder strewn about the hen-house floors, or a dusting of flour of sulphur, similarly, will help to rid the old hens of vermin, as they will roll and scratch among the dry earth there, if grain be occasionally buried beneath the ground floors of their quarters. This, then, is the proper time to attend to these these matters, because they can at no other period in the twelve-month to be managed so readily and handily as in the month of August.—*Poultry World*.

Cooked Meat for Fowls.

Fowls, as well as dogs, become quarrelsome if fed on raw meat. Besides, cooking makes it more nutritious. When raw, it is rather hard and crude, compared with the mild natural diet of worms and grubs, which are for the most part soft, and easily dissolved by digestion.

Occasionally, for variety, a little meat may be given raw. Fish, when plenty, is more conveniently given boiled, because in that state the fowls easily pick every morsel from bones, and no mincing is required. Chandlers' scraps have the advantage of being already cooked, and on that account, as well as many others, they are excellent.—*Poultry World*.

New Breeds of Ducks.

For many years the white Aylesbury and the rich-colored Rouen duck—colored like the mallard, "only more so"—have been the acknowledged breeds for the farmer and duck-raiser. Within the last few years, however, several new breeds have come into prominent notice which deserve attention for their proved useful qualities. The longest known of these is the Cayuga, or large black duck of America. This bird resembles in color the beautiful little black East India duck, except that the plumage is browner or less glossy; but it is larger, being nearly, if not quite, the size of the Aylesbury. These are quiet in habits and good layers. They are as yet rare in this country, but deserve notice as being hardy, maturing very early, and consuming rather less food than the other varieties. The birds occasionally moult white feathers, but this is no sign of impurity of race. The flavor of the flesh is, in our opinion, superior to that of any other domestic variety, more resembling that of the wild duck; and this makes the Cayuga worth attention. The next variety is the Pekin, a large duck of a creamy-white color, with a brilliant yellow bill. This breed was imported from Pekin. The people who selected them there took them for geese, owing to their large size, the length of neck and the large heads, but this was soon found to be an error. After they became known known it was discovered that one or two similar birds had previously reached England. The legs are set far back, and are rather short; but the greatest peculiarities are the very short wings, and the peculiar, boat-shaped outline of the body arising from the fullness of the breast and stern. We learn that the Pekin duck grows early and rapidly, and fattens well, and from the specimens already shown there is little doubt that when bred more largely it will surpass in size any other duck known. Its appearance on the water is particularly handsome, and it lays well, beside being exceedingly hardy. No breed could better suit those who would like a fine white duck of handsome appearance, but who do not care for a pink bill, which is made so much of with the Aylesbury. Lastly, several letters have lately appeared concerning what are generally known as Indian Runner ducks. The color of these birds varies, but is usually like that of the mallard. The peculiar characteristic of the breed is that the legs are set far back, and that the bird stands upright upon them, like a penguin, and in this position runs very fast indeed. Whether the variety was really imported from India is uncertain, though it appears probable. The size of this duck is not equal to that of either the Rouen or the Aylesbury; but as a layer it bears the very best of characters on all sides, and in that capacity may be recommended to many of our readers.—*Ex.*

Garden, Orchard and Forest.

Seasonable Hints—August.

BY HORTUS.

The customary dry hot weather of this month will be trying to the existence of trees planted last spring. The soil should be loosened several inches deep; a liberal watering given if any signs of wilting or drying up are observed. Remove grass or weeds that may be growing in close proximity to trees, absorbing all the nourishment. Apply a good mulching if not already done. Newly planted hedges and evergreens will be benefitted by the same treatment, and much trouble and expense may be saved in the future by careful attention to this particular time of year. Layers should receive an occasional watering. Beds and borders of shrubs and herbaceous plants should be hoed, and all weeds, dead branches and unnecessary growth removed. Neatness and order should prevail everywhere. Fresh raked earth, snug plants and bushes out of bloom are more pleasing to the eye than weedy, untidy flower beds in full bloom. Have the box of hellebore handy for dusting the bushes on the final appearance of the currant worm, which frequently comes at this season to eat the "last leaves of summer." Raspberries and blackberries, as soon as the fruit is all gathered, should have the old canes removed, also thin out new growth; some kinds throw up so many suckers that if all would be left the berry patch would become a wilderness with but very little fruit. The black cap varieties reproduce themselves freely by having the tops of this summer's growth covered with a few inches of soil; they will root freely and may be allowed to remain till the following spring, when they can be transplanted into rows for fruiting. Early apples, as Harvest, Red Astracan, Duchess of Oldenburg, &c., should be carefully hand picked, rejecting any wormeaten, scabby or diseased fruit. The use of new barrels facilitates a good sale. Any fallen fruit should be gathered and destroyed—merely feeding to pigs is not enough. Plums and cherries have suffered very much from Aphid. The curculio, too, has been terribly destructive, hardly sparing the little fruit that escaped frost. How necessary it is to do all you can to destroy these pests need hardly be mentioned. This is a good time to plant out strawberries; put in at the latter end of this month they form strong hills for fruiting next season; keep plants from getting too dry; shading after planting for a few days with boards or brush will assist their growing. We also advise the planting of evergreens; they may be planted with perfect safety, selecting cloudy or rainy weather for the operation. After planting they should be well watered and mulched. Parties who have been unsuccessful other seasons would do well to try evergreen planting from now till October. Amongst the vegetables very little is required doing beyond keeping the ground loose and mellow by an occasional hoeing. This will assist the growing crops and prevent weeds from seeding. Clear out old lettuce stalks and pea brush. Tomatoes and melons can be assisted in ripening by placing boards underneath the vines. Celery requires earthing up, but not too much at a time as it checks the growth. In the flower garden dahlias should be tied to stakes and growth thinned out by pinching. A little liquid manure applied often will very much improve color and size of blooms. Cuttings of geraniums, coleus, &c., may now be taken off and put in shallow boxes of sand, with about an inch of soil underneath the sand; keep the sand damp and the box in a shady place; here they will root readily, when they may be potted off, and will make fine plants for blooming in the house. Seeds of the foxglove, hollyhock, del-

phiniums and other hardy border plants should be sown now in a moderately shady place; after coming up they may be transplanted into beds six inches apart, and will make fine plants for blooming next summer. If your fruit, vegetables or flowers promise to be fine make sure to secure prize list and make the necessary entrees for exhibiting them, thus showing what your soil and locality is capable of producing with skill and labor. How often the remark is made at fairs, "What miserable greenings and spys. I have got much finer at home, and did not think they were worth bringing." We see, as a rule, year after year, at our exhibitions, the same exhibitors with usual exhibits, and taking nearly the same prizes. For all the good effect this has on the community, the association or society might as well present them with the premiums without them going to the trouble of exhibiting. We want more competition, so stir up friends and let the country know you are in existence.

Unfair Judging.

BY HORTUS.

The season for exhibitions is drawing near and intending exhibitors are now speculating on the chances of their best stallions or bulls, their South-down sheep or improved Berkshire pigs. If in the Horticultural line their Baldwins or Snows, Lambard plums or Flemish Beauty pears. In the mechanical department brains and heads are busy contriving and devising improvements whereby to excel their neighbors and catch the public. For in these lines competition is keen and people must think and work and advertise if they are bound to succeed. Now this is as it should be, and at our fairs how often is the case, when people have been to all the trouble and expense of entering, of freights and fares, besides the attendant care and safety necessary to the production and delivery of their exhibits—to have this all for nothing and worse, by unfair judging. There is unfair judging through ignorance and unfair judging with intent—the latter is the worst phase of the two. There is some satisfaction in seeing the best win; it encourages the lucky one to go on and stimulates the unsuccessful to find out the cause of their failure and resolve to do better next time. But when an inferior animal or article secures the premium through ignorant or deliberate unfair judging everyone is dissatisfied, it disgusts the lover of fair play and no favor, and has a most damaging effect on all concerned. Some people get the reputation of being competent to judge in some particular class, this sticks to them and henceforth they are always on hand, when in their own hearts they know they know nothing about it. I suppose after a few years experience and the mingling in the society of better posted men they pick up sufficient knowledge to rub through—its a pity however, that their knowledge should be gathered to the annoyance of many and the detriment of the Association.

It behooves agricultural societies and exhibition committees to select good men and true. Men whose past life and experience render them particularly fit for the position of judge in this or that class. Make it your duty, to carefully inquire for and secure the best ability to dictate what is good form, good breed, good taste and color.

Judges should be selected from the different parts of the country and as wide apart as possible, avoid securing the second cousin to some possible exhibitor's brother-in-law. At their duty, judges should insist on all the requirements and regulations being complied with as far as possible in reason and justice, they should carefully grade, class and examine and not slip over the work superficially. Every animal in its own class and of the age required. Every plant, fruit, or vegetable

wrong-named, reject, no matter how fine the quality. Mistakes will occur of course but a great deal may be done to the future success of exhibitions by having honest and skilled judges.

Round-headed Apple-tree Borer.

BY J. W. ROBISON.

I presume that in a half day I have frequently killed newly-hatched larvæ and crushed unhatched eggs of this beetle to the number of two thousand. My observations are, that the eggs are deposited from the latter part of June to the first of September. There may be a few deposited a little earlier, and some later, but the great majority are deposited during the harvest time. There are usually from three to seven eggs laid in a tree, but sometimes less than three, and I have taken out of a tree, only three years from nursery, twenty-one larvæ and eggs, evidently the work of more than one beetle. I think that usually but one beetle deposits eggs in a tree, and they are generally as evenly placed around the tree as the uneven surface of the tree will admit of, and very rarely all on one side of the tree. The eggs are usually deposited from one to six inches above the ground, though some will be found below the surface of the ground, in such places as where the ground has cracked open or the swaying of the tree by the wind has caused an airy place about the root. The beetle never deposits its eggs in the tree where the earth is touching the tree. In exceptional cases it deposits its eggs higher up, even in the branches. The larvæ seem to develop equally well in these parts, but not so well if deposited in any of the cavities below ground level, as there they are very liable to be drowned if these cavities become filled with water before the larvæ get well buried in the tree.

The eggs are deposited in the bark of the tree, the beetle puncturing or splitting the bark of the tree upward and downward, and a little sidewise the puncture looking very much as if made with an ordinary sharp-pointed pocket-knife. The eggs are usually injected into this puncture so deep as to be out of sight, but not always. On young and thin-barked trees the eggs will be pushed in next to the wood, but in older and thicker-barked trees they will be only through the hard, outer bark, and in the inner, soft bark.

As soon as the egg begins to hatch, which is in a few days after being deposited, its enlargement causes the puncture to open, and thereby it is much easier detected. The young borer hatches out on the inner side of the egg, and eats out a circular place of the size of a half-dime, and then starts off, boring upward at first, but sometimes sideways or downward. At this stage of development, it is easy to detect the young depredator by a few drops of discolored juice of the tree exuding from the puncture and sticking on the bark. The larvæ usually bores down below the ground surface to winter and up again the summer, living in the larva state in the tree nearly two years, then boring out in the form of the beetle, ready to repeat its round again.

The remedy I have successfully used, is to keep the ground around the trunks of the trees clean and mellow, so that there will be no cracks or openings there for the beetles to get in to lay their eggs in the tree, and so that the puncture where eggs are laid or young beetles hatching may be easily seen, and eggs or insects destroyed, which can be done while in the egg by merely pressing firmly on the puncture with a knife blade—the cracking of the egg can be heard distinctly—and if hatched, by cutting away the dead bark over the little cavity first eaten out and killing the young worm.

The borers do not go into the wood much the first year, and can be easily followed with a knife; but if not taken out soon after hatching, they seriously injure, if not entirely kill the tree, especially when they run around just under the bark, as they sometimes do; or when several borers are in a small tree, they so injure it that it breaks over with the wind.

If the ground is well cleaned and patted down smooth around the trees about the last of June, the destroying of the eggs and young borers will be much easier and more certain.

The trees should be examined twice, and perhaps three times a year, if the borers are very numerous, in order that those first hatched may be killed before they do serious injury to the tree. August, September and October are the months in which to destroy them. They seem to infest

certain parts of an orchard from year to year, while other parts are comparatively exempt; low grounds have been more infested with me than higher parts of the orchard. A man can usually examine and kill all eggs and borers in five hundred or more trees per day, if the ground has been properly prepared; and no work in my orchard has been so absolutely necessary.—*E.C.*

The Premium Orchard of Michigan.

The older part of the orchard was set about twenty years ago. About half of the trees were root-grafts, and the other half natural fruit, which has since been top-grafted. In the beginning, Mr. L. H. Baily of South Haven, the owner, was strongly impressed in favor of top-grafting trees of natural fruit, but he now confesses that he sees no difference in the bearing, growth or hardness of the trees propagated in these two different modes. The trees are set forty feet apart, in squares, which is seven to ten feet more than is commonly practiced. They now evidently need all the room they have. From former experiments, I know the roots reach across each other, from tree to tree, all over the orchard. These trees generally bear full every other year, though some bear moderately every year, and a few bear heavily every year. This year there is about a fifth of a crop of fruit—more than can be said of any other large orchard in the State.

For some years Mr. Baily has manured the ground all over heavily once in three years. He also mulches a part of the time with brush, straw, etc. He plows about once in three years, and prefers at that time a heavy dressing of horse manure and saw-dust; the greater the proportion of manure to the sawdust the better it suits him.

For some years the owner has not been able to fill his orders for apples. As he remarked in September to the Committee he had lost \$1,500 within four weeks, by not having apples enough to fill his orders. One of the chief reasons is that he raises a good deal of fine fruit, and never ships any but first-class, extra apples.

The branches are started five feet from the ground, and when bearing bend to the ground. The codling moth, as in all his neighborhood, is checked by cloths in the crotches of the trees, and by Logs and sheep. He is also making some promising experiments, which he is not yet ready to publish.

In our travels we saw nothing more worthy of notice than the contrast about to be mentioned. It is one every orchardist would do well to think about. Adjoining the famous orchard of Mr. Baily is another; separated only by a line fence. The soil is the same, the trees are the same varieties, and were set at the same time, and all in both orchards treated alike for the first few years. We have seen how the Baily orchard was treated. The owner of the other orchard has used no manure about the trees. He has not cultivated the land. The trees have stood in the grass. They are mossy, with yellow leaves, troubled with borers, and make a slow growth. Last year, when nearly everybody had plenty of fruit and to spare, this orchard bore but few apples, and they were hardly worth gathering, while this year it is hardly necessary to say that there was scarcely a decent apple to be seen. In the neglected orchard we measured an average tree of Northern Spy. The diameter of the top was about fourteen feet; the circumference of the trunk nineteen inches; while in Mr. Baily's orchard a Spy tree, of the same age, had a top twenty-two feet in diameter, and a trunk twenty-seven inches in circumference. Both of the trees had been set seventeen years. We were unable to learn how many apples the well-cared-for tree produced, but last year it hung loaded with fine fruit. Another Spy tree, near by, had been well treated and had been standing twenty years. The circumference of the trunk was thirty-eight inches; the diameter of the top thirty-five feet. Two years ago it bore twenty-eight bushels of number one apples, and this year it contained all the tree was able to hold. Close to this was a Rhode Island Greening of the same age, thirty bushels of choice fruit. The circumference of the latter's trunk was forty-five inches and the diameter of the top forty feet. One branch spread out twenty-two feet, thus occupying, after twenty-two years, all the ground, and still demanding more in some directions.

There are no secrets in regard to the management of these two orchards. If we were to tell how it happens that Mr. Baily has such "good luck" with his orchard, we should attribute it chiefly to two or three causes. The soil is not very dark or loamy. It is gravel down for ten

feet, thus giving perfect natural drainage. The roots of the trees have never been damaged by water. The best twigs of the old trees grow six inches or a foot in a year. With more loam in the soil, he would have a greater growth of timber and less fruit; he might have larger apples, but they would not keep so well or be of so good a quality. In Michigan, there are many orchards which would stand abuse, poor culture or no culture, much better than that of Mr. Baily.

Yellow Cottonwood.

The opinion is common that cottonwood is only valuable on prairies for windbreaks, as the wood has little value for fuel or for any uses of the farm or workshop. The variety—if it be merely a variety—known as yellow cottonwood, really has an economical value, aside from its value for shelter-belts, that should be better understood by our farmers. Bryant says of this variety, "It's heart wood is of a yellowish color, not unlike that of the tulip tree. It grows in the same situation as others of its kind, and is split without difficulty into rails. Shingles have been manufactured from it which lasted a considerable time. When sawed into lumber it does not warp like the cottonwood generally. If populus Angulata, and P. Monilifera, are really distinct, it is a matter of uncertainty to which this variety belongs. The subject should be investigated." C. E. Whiting, who has grown this tree extensively for a number of years, has expressed his views as follows:—

"We have both the white and yellow cottonwood. I have fence boards of this yellow cottonwood upon my farm that have been in use 15 years, and they are yet good. My house is sided with cottonwood, has been built ten years, and looks as well as any pine siding in the country, and stays to its place well. It is really better as fencing than pine, being tougher and stronger. It stays to its place as well and is equally durable. I need hardly say it has no rival in rapidity of growth, as it far outstrips the willow. I set cotton posts from old trees on the bottom in the spring of 1860. I moved this fence last fall, and nine-tenths of them are yet good. The yellow cottonwood, split up green and put under a dry shed to dry is good enough for my folks to use for fuel.

On my first planting of cottonwood twelve years ago, the best of them now measure sixteen inches in diameter. We would make plantations very thick; I now plant 4,356 trees to the acre; this shoves them up straight and symmetrical. In this way we get the dead sure thing on the side-branch business.

Cottonwood can be readily grown from seeds. Being upon the river bottom in June, I noticed the cottonwood trees were loaded with seed; had one cut down and loaded the wagon with branches with the seed attached. I furrowed some ground quite deeply with plow, strewed the limbs in the rows, and my success in growing many thousands of seedlings was most perfect."

In the interior sections, where seedlings cannot readily be obtained from the river bottoms, the yellow cottonwood may be grown from cuttings about as readily as the willow. The evident advantage would also ensue of propagating the right variety.

Plums in the Northwest.

Those fruit growers who still keep a stock of fine plum trees are encouraged this year with good prospects says the *Prairie Farmer*. This is not the case more than one year in five, and the trees are so short lived they seldom give more than two or three full crops. This year trees of Lombard, Duane's Purple, Imperial Gage, etc., are loaded with fruits as yet untouched by curculio. It frequently occurs that this pest is absent on fruitful years. But a yet worse foe is plum rot, which always comes when there are heavy rains about ripening time. Nothing can check this, and between the two plum growers have a very discouraging time indeed.

Plum rot is even worse at the south than with us, and many years ago Mr. White recommended the following varieties as being less subject than others, viz:—Columbia, Jefferson and Bleeker's Gage.

Plum trees are very easily raised if they are short lived, by using the ordinary wild ones as stocks. A neighbor claims that he can always raise crops every year by planting in clumps six feet apart and 100 or more trees together. Thus grown they protect one another. Is this a plausible theory?

The Codling Moth.

At a meeting of the W. New York Horticultural Society, Mr. Greenway gave an account of his observations on the habits of the codling moths and his method for preventing their ravages.

He found that the larvæ of the codling moth liked cotton-batting better than any other material for nesting. He found they moved only at night, they were filled again in the morning. But if they were all clear in the morning they were all clear at night. The apple containing the worm falls to the ground, and if the insect is sufficiently matured it will crawl up the tree the first night. He placed paper bands around his trees, and when protected in that way about one apple in four was infested with worms. On trees unprotected, but one apple in six escaped. He found it to be a universal rule that the worm would seek a place to spin its cocoon. If removed from the cocoon they will spin a second very light, as the first seems nearly to exhaust them.

The first brood, which is produced from the worms of the preceding year, inflicts little damage; but the second, which comes from the worms of the same year, prove disastrous. He had exposed the larvæ to a temperature of ten degrees below zero, and in half an hour it was as lively as ever. He clears the bands of worms once a week until the end of the season. He found that troughs filled with crude oil, which he had placed around the tree, proved instantly fatal to every worm which touched it. He had prepared a band consisting of cotton-batting, covered with water-proof paper, which he had made at a price of \$2.50 per hundred unlined, and \$5 lined, which would last four years. The moth and larvæ move exclusively in the night; hence the futility of trying to keep it under by the use of poultry, though hogs can catch some of them. They seldom immigrate from one tree to another unless from want of material; they always seek a dry, sheltered refuge in which to spin up. He had once removed an old picket fence in his orchard; it was a well-built fence with tight joints, yet he found every joint completely filled with worms, which had pressed themselves in.

PEAR BLIGHT.—E. Moody, N. Y., remarked at the Rochester Horticultural meeting that pear blight was one of the mysteries that might be solved at some future time. He alluded to the frequent claim that it is caused by electricity, and added that there was as much electricity in France as here, but no pear blight. Prof. Prentiss, of Cornell University, regards fungus as a consequence and not a cause of the disease.

STRAWBERRIES.—An English cultivator gives the following as his mode of planting and cultivating the strawberry. The earliest runners are selected and layered on pieces of turf set into the ground. When well rooted they are severed and transferred to their permanent place on deeply dug and well enriched ground, two feet one way and a foot and a half the other. They are well cultivated and the runners are cut off. The third year they must be renewed.

KILL THE INSECTS.—For five years I have not lost a vine or plant, because for this length of time I have treated the bugs, which once ate up my cucumber and melon vines and cabbage plants, with repeated showers of tar water. I take a barrel with a few gallons of gas tar in it and pour water on the tar. When the bugs appear I give them a liberal dose of tar water from a garden sprinkler. If they return, or more come, I repeat the dose. My experience is that it will kill both the old long potato bug and the Colorado potato beetle. As the water is used from the barrel I pour in more so as to have it ready when needed.—M. Morris.

An American writer says that he has not for five years lost a cucumber, melon or cabbage plant, his remedy being to pour water into a barrel which contains a few quarts of gas tar, which impregnates the water, and this is supplied with a garden sprinkler. If rain washes it off he renews the application. He also asserts that it will repel the Colorado potato beetle.

A practical gardener claims that the best and cheapest manure for the garden is obtained by clearing the earlier crops in September, and then sowing rye thickly, turning it under when a foot and a half high the following spring. He then plants at once on this inverted sod, which rots in a few weeks, keeps the soil moist in the severest droughts, and is worth several times its cost spent in buying manure.

Agriculture.

Construction of Tile Drains—No. 3.

BY PROF. MANLY MILES, LANSING MICHIGAN.

Directions are usually given to begin at the outlet to dig the trench for the tile, so that the water may readily run off, and to begin laying the tiles at the upper end of the drain and work towards the outlet.

The reason for this arrangement of the work is that there is no danger of any silt being washed in to the drain in the process of construction. There are, however, several objections to this method of laying tiles that are, in my opinion, more than sufficient to counterbalance the single object aimed at. In the first place, in beginning at the upper end of the drain to lay the tile it is necessary to have the entire length of the drain finished, if the slope is slight, before laying the tiles. If there is no water in the soil at the time, and rains do not occur before the drain is completed, this can be done without any disadvantage.

The risk, however, of the banks of the ditch caving in where the soil is yielding and springy, and the softening of the bed in which the tiles are to be laid, from the running water, in many cases will render the finishing of any considerable length of trench some time before the tiles are laid, decidedly objectionable.

For many years I have been in the habit of beginning the work at the lower end of the drain, and finishing it as fast as it could be made ready for the tiles. The only objection to this method is that careless workmen are liable to let some of the soil wash or crumble into the tiles, and thus endanger their obstruction.

The answer to this is that careless workmen have no business to be laying tiles at all, and with careful hands the danger is more imaginary than real.

When the first three or four feet of tiles are laid at the lower end of the trench, the earth may be filled in and carefully packed over them to the depth of 10 or 12 inches, and the person finishing the trench and laying the tiles may make use of this as a platform to stand on while preparing the bed and laying the next two or three tiles, which are in turn covered in the same way and used as a basis for repeating the operation.

Even when there is considerable water running in the trench, a careful hand will not allow the earth to wash into the tiles already laid. The process of laying the tiles and filling the ditch thus follows closely on the process of excavating, and in hard soils the danger of caving in of the banks is very much diminished.

The tiles, too, are laid in the bed prepared for them before it becomes softened by the running water and converted into mud, and they rest upon a comparatively unyielding foundation. When the work is left over night, or for other reasons, a firm, compact sod should be carefully placed over the end of the tile last laid, the grass side towards it, to prevent any washing of silt into the drain. When beginning work again, any earth that has washed or fallen into the ditch should be carefully removed before taking up the sod that has served as a strainer. If a heavy rain should occur in the interval of suspended work, the sod will allow the water to soak into the drain, so that it will not accumulate in the unfinished trench above. When

there is much water in the soil the tiles already laid will be taking it constantly away, and thus improve the condition of affairs for the subsequent work.

The Plummer Fruit Dryer.

The Plummer Fruit Dryer, of which the above cut represents the factory dryer, has been patented for Canada by Wm. B. Kyle, of London, Ont.

These dryers are made in two sizes, called the factory dryer and the family dryer.

The factory dryer occupies about 7 feet square on the ground; contains sixty trays or frames, to-

Brickwork is necessary in setting—2,000 brick being required.

These dryers have been very successfully operated on onions and potatoes as well as on the different fruits, and have invariably given the fullest satisfaction. Those who have purchased and used these machines testify as to their merits and to the high character of the work produced by them.

These machines are peculiarly adapted to the preserving of green corn, beans, tomatoes, hops, and in fact all our vegetables and fruits can be treated by this process.

The family dryer is on a smaller scale and only occupies three and a half square feet, has fifteen frames or trays; can be operated by two boys or girls, and is guaranteed to dry from one and a half to two bushels of apples per hour.

Over one hundred machines are in operation in Oregon and the testimonials are extremely complimentary in every respect.

From an examination of the dryer every one must be satisfied of its great utility to farmers and fruit growers.

The dried fruit is beautiful, and no such samples have been before shown in this neighborhood.

The dryer received the Bronze Medal at the Centennial and the gold medals of Oregon, in 1876 and 1877 for excellence of flavor, color and condition of fruit.

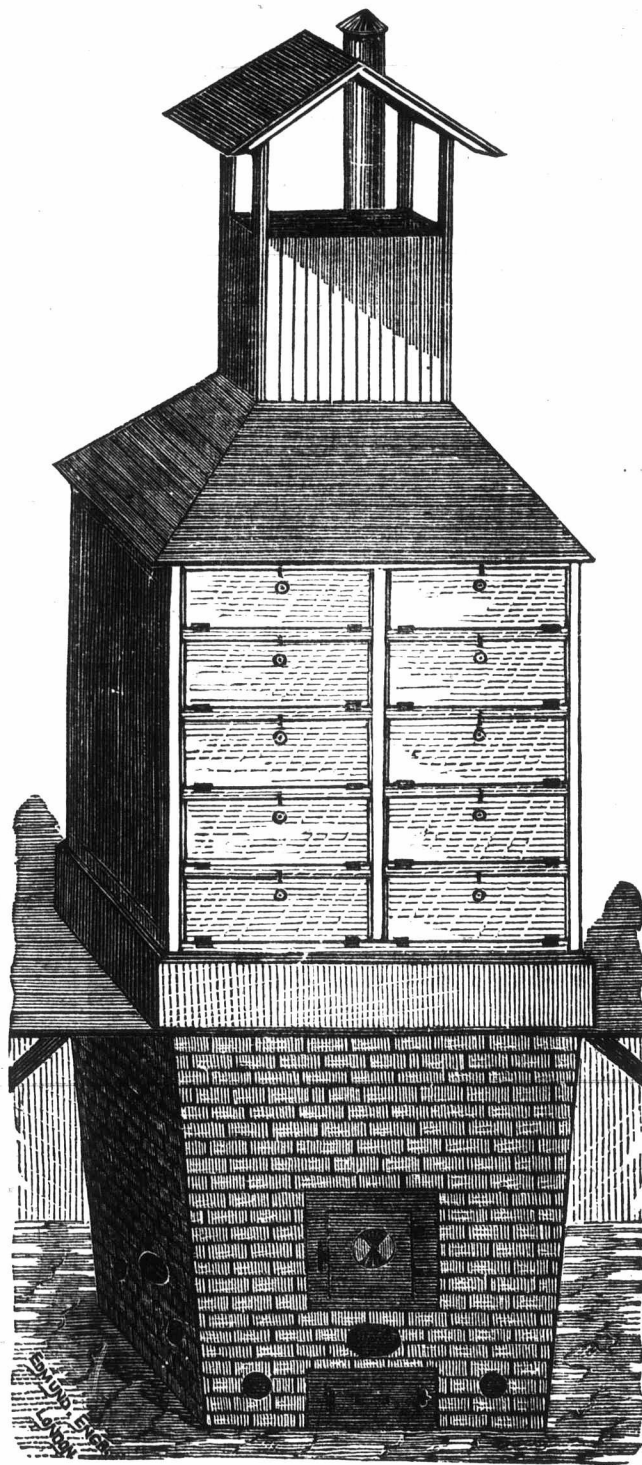
Large quantities of potatoes dried by this process have been shipped to England and used in the royal navy.

Broad Tires on Wheels.

The condition of the roads the past season has done more to common-tired wheels than all the arguments that have ever been uttered. The soft roads have been so cut up with the 1½-inch wagon tires, and these have sunk so deeply in the mud that, in some places, travel has been impossible for weeks at a time. Those who have been thus mud bound are now convinced that it might have been better for them had the tires of their wagons been three or four inches wide; but they are still in doubt about the ease of draft of these broadwheels. Now, it should be evident that a broadwheel, that will not sink into the ground, is of much easier draft than a narrow one that cuts in two or three inches. The difference in draft of a narrow and broad wheel upon the hardest, smoothest road is inappreciable, and it is a matter of doubt if it is in favor of the one or the other. Theoretically, there may be a difference, to a small extent, in favor of the narrow tire, but as our roads are far from being hard or smooth, the difference of draft will be decidedly in favor of the broad tire. A load of manure can be drawn across plowed ground in a broad-tired wagon by a team that could not move it one foot with narrow tires, and the softer the ground the more apparent will be the difference in favor of the broad wheels. It is to be hoped that the manufacturers of wagons will make the experiment of offering wheels with broader tires; we believe they would soon become very popular—*Agriculturist*.

The soil best adapted to the wheat plant is found on uplands, and is known by having a clear red clay subsoil. All soils will produce wheat; but all soils will not, nor can they be made to produce good grain or remunerative crops. Low lands, for instance, having too much alluvium and humidity, almost always fail in bringing wheat to maturity. A surplus of straw food moisture in the atmosphere builds the straw up, but fails to develop the grain. Rust invariably follows, and swivels the grain; and then both are lost.

The best time to secure Hungarian grass is when it is in blossom, and before the seeds have formed. The beards at this time have not reached that degree of stiffness which the writer thinks causes injury to the stomach of the horse, while the embryotic seeds are perfectly harmless. One large farmer in the State has, to our personal knowledge, been using it for feed for his horses, at one time keeping eight on it without injury; but then he always aims to cut at the right time.



PLUMMER'S FACTORY FRUIT DRYER.

gether with 60 square yards of galvanized wire cloth, on which to spread the fruit; is also supplied with the inventor's improved heater, which is very durable, elaborate in detail, and burns either coal or wood.

The dryer is also constructed in sections and easily adjusted and set up ready for operation, and is guaranteed to dry six bushels of apples per hour. Five hands are required to operate this machine to its full capacity, and from ½ to ¾ cord of wood necessary in a run of 12 hours. A building—one story, 20x24 feet, elevated six feet from the ground—to give room for the heater which is placed under the dryer, is desirable in which to set up and operate this machine to advantage.

Barns Without Beams.

The frequent use of the horse-fork and hay carrier renders it desirable to avoid cross beams in the barns, as these prevent the convenient movement of those implements. Formerly it was necessary to have the hay-mows so low that a man could easily pitch the hay on it from a wagon. This made it necessary to have the barn long and wide, in order to secure sufficient capacity. The roof is the most costly part of a building, and as the wider the roof the stronger the frame must be to sustain the weight, the old-fashioned style of barn was very costly. The machinery now in use for handling hay enables us to avoid the extra cost of building, and long, high, narrow barns are found to be more convenient in many cases than the low, broad ones. But to construct a barn without cross beams to support the sides and roof, is a difficult problem for the ordinary builder, who does not understand the nature of truss work, and the immense strength gained by skillful use of comparatively very light timber. The airy, web-like railroad bridges, which combine strength with lightness and elasticity, and the ordinary balloon frame houses, are examples of truss work, and there is certainly no reason why this principle of construction should not be made available for farm

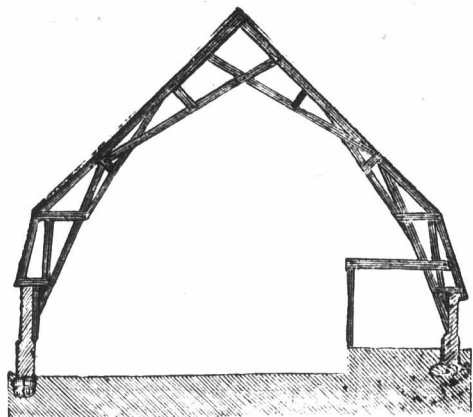


FIG. 1.—SECTION OF BARN.

buildings. We now give some illustrations of barns of ordinary shape, without cross-beams, and with roofs made on the principle of the truss. The section fig. 1 is that of a Danish barn, illustrated in the *Journal* of the Royal Agricultural Society of England. The mode of construction is shown very clearly by the engraving, it being only necessary to point out the longitudinal timbers, which are shown by the dark shaded parts, and the manner of securing the roof timbers to the walls, which is done in an ingenious manner. The T shown by the dark lines in each wall, is an angle iron built into the masonry, by which the strut is fastened to it.

At fig. 2 is a section of a cow stable, built above where the fodder is stored, somewhat on the same principle. The arrangement of the stable below is also worthy of notice. The central passage is the entrance way for the cows, with a manure gutter on each side, in the rear of each row of stalls. The feeding passages are on the outside, and the cows are fastened by chains, which slide on the irons seen on the sides of the stalls. A ventilating shaft (A) is carried up from the stable through the floor above, and out through the roof. This is divided so as to form four distinct shafts, through which cold pure air can descend, as well as hot air can ascend. The section of the shaft, and the upper extremities above the roof are also shown. The framing of the roof is simple, light, and strong; the roof is covered with straw thatch, shown by the thick dark shading. At figure 3 we give a method of a similar construction by means of light timbers fastened together with bolts. The walls are of stone or brick, and if thought desirable these may be strengthened by buttresses wherever the roof timbers exercise the greatest thrust. The main timbers are intended to be 3 x 10, the braces 2 x 8 or 3 x 6, as may be thought proper. Cross girts may be used wherever needed to stiffen the roof.

The ends of the main timbers should rest in shoes fixed so the wall by angles and bolts. The form of a shoe that would be useful to sustain the weight of the timber and its load is shown in fig. 4. This may be cast or may be made of wrought iron. The building is intended to be 36 feet wide; the



FIG. 4.—shoe for beam.

walls 12 feet high; the main roof timbers 20 feet long, and the cross-beam at the top 24 feet long. The machinery for carrying the horse-fork will be suspended to the beam in the usual manner.

Feed-Racks for Fields and Yards.

We give herewith, in response to some inquiries, some illustrations of cheap and convenient racks for feeding green crops to stock, for use in yards or

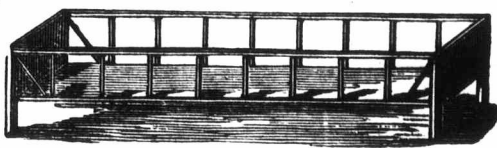


FIGURE 1.

fields. Either complete or partial soiling is now very frequently practiced, and many farmers and dairymen find it impossible to do without this help during that part of the season when pasturing fails. Early planted corn fodder is now nearly ready for use, and in feeding this a great saving is gained by the use of racks which prevent its waste. At figure 2 is shown a common form of feed rack; easily made, and which, if three feet square, will accommodate four cows without dan-

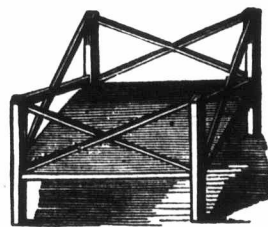


FIGURE 2.

ger of quarrelling. It is made of fence strips nailed together and braced as shown. Wrought nails should be used, and the same be securely clinched. A larger rack, useful for cows or sheep, is shown at figure 1. This may be made of fence strips with 4 x 4 scantling for posts, and in size 16 feet long by 4 feet wide. *American Agriculturist.*

The importance of manuring ground specially for the wheat crop is becoming more and more evident. It has been found in Pennsylvania where rust prevails, that wheat on manured land is much less affected than that on the unmanured. A correspondent of the *Practical Farmer* writes: "A large per cent. of the wheat is hopelessly ruined by rust and fly. But wherever you find a field that has been manured, there you find good wheat. To make a good crop of wheat requires less manure than for any other crop, if it is properly applied, and my experience teaches that this should always be as a top-dressing." Manures rich in nitrogen and phosphoric acid are best for wheat.

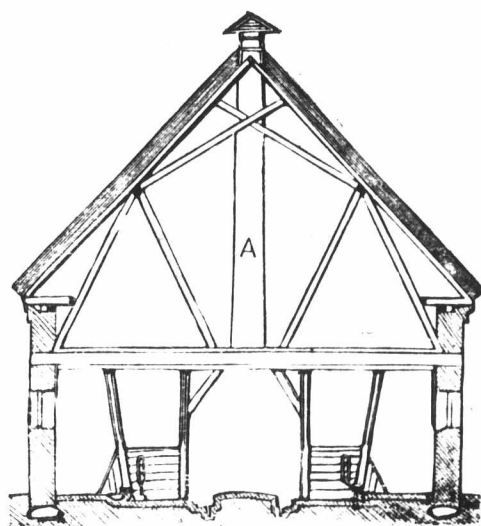


FIG. 2.—SECTION OF COW HOUSE.

It is estimated that the loss to agriculture from the growth of weeds instead of useful grass, in meadow and pasture lands, is not less than \$100,000,000 per year in the United States. Nothing will sooner or more cheaply bring about the desired change in this direction than a more general employment of sheep as scavengers on every farm where their introduction is indicated.

Co-Operative Farming.

That man is said to be a benefactor of his species who makes two blades of grass grow where only one grew before. Could not the principle of co-operative labor be applied to farming, so that a vast increase of production might be attained without any increase of the working expenses? It is with farming as it is with other industries—the more extensive the scale upon which operations are carried on the smaller becomes the proportionate expense. That is why, in the Mother Country, large farms are rapidly superseding small ones. There a man who works a farm of 140 acres can hardly, after paying his rent, earn anything beyond a bare subsistence. Here, happily, most of our farmers are freeholders, but that circumstance does not reverse the economic law, that the more perfect the application of the division of labor principle the larger, necessarily, is the product. On a few farms in this country there are single fields of from 40 to 100 acres in extent. Every practical farmer knows that it is easier and cheaper, especially since machinery has come to play such a large part in agriculture, to work a single field of a hundred acres than it is to work half a dozen fields the combined area of which is no greater. But the bulk of Canadian farms aver,

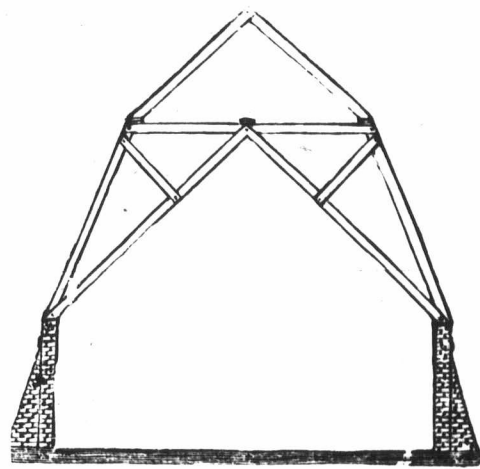


FIG. 3.—FRAME OF LIGHT TIMBER.

age one hundred acres, so the cheapness which pertains to farming on a large scale seems out of the reach of the average farmer.

Is there, however, any reason why a number of farmers, occupying contiguous farms, should not co-operate for the purpose of working their farms in combination, thus securing to the owners of one and two-hundred-acre farms all the advantages of extensive farming? Can any reason be suggested why farmers should not combine, any more than capitalists or traders? Farms lying contiguous to each other could easily be thrown into one; fences could be largely dispensed with (and the land lost in connection with snake fences is by no means inconsiderable), labor would be economized, and all the advantages of combined effort secured. In a crude way, co-operative farming is exemplified in the "bee," which may be reckoned an institution in our newer settlements. But the "bee" involves a loss of time which is wholly incompatible with true economy. Take it in its more modified form. Smith wants Thompson to give him a day's help. The better part of a day is consumed in the preliminary negotiations. When all is fixed, and Smith is awaiting Thompson's arrival in order to begin operations, Thompson's little girl comes over to say that her father can't come that day, but will come on the morrow. Another day lost!

Now, supposing four farmers, whose farms lay contiguous, were to agree upon working them together, is any one prepared to say that it could not be done with more advantage and profit than if each continued to act independently of the other? In the latter case there would be a multitudinous variety of duties to be performed in the course of a season; in the former case the variety would not be increased, while they could be performed in a "wholesale" manner. It matters not whether the co-operation we speak of were only in regard to the working of the different farms, or went the length of a joint purse; in both cases a clear gain is apparent. We commend this matter to the serious consideration of the farmers.

Clover helps the soil in many ways. Its roots are the cheapest sub-soiler, and if the field is not very wet, will give all the drainage needed for ordinary farm crops.

Salt as a Fertilizer.

Chloride of sodium, or common salt, is a compound of one equivalent of chlorine to one of sodium. When pure, 100 parts of salt contain 39.66 parts of sodium to 63.34 of chlorine. As a manure, in Europe, salt has been used for nearly 200 years, and is used there now to stiffen the stalks of the growing cereals, and also as a preventive of rust. Experience has shown that it is not always a remedy, especially on lands where potassium and the phosphates are exhausted. That salt is beneficial as a manure, the long practice and experience of European farmers plainly show; also, the fact that it is now used more than ever before. In large quantities it is destructive to most forms of vegetable life, but in moderate supply it is beneficial to all farm and garden crops. It is well known that the same quantity of salt which would promote the vigor of celery and asparagus, would kill young grass, and indeed, almost all other agricultural plants in their early stages of growth. All marine plants, such as asparagus, beets, wurtzels, celery, cabbage and onions, together with many bulbous plants, will flourish after a saturation of the soil with brine that would kill an apple or an elm tree. After an inundation of Friesland by the sea in 1825, the apples, cherry, poplar, willow, elm, and many other trees and shrubs died, while all the marine and bulbous plants named above, were not only uninjured, but most of them thrived more luxuriantly than they did before the inundation. Prof. Voelcker, who made the most thorough experiments to test the amount of salt which plants will bear without sustaining injury, found that 24 grains of salt to the pint of water produced no bad effect on onions, turnips, radishes, or meadow fescue, and that cabbage and asparagus would stand it well up to 100 grains, even when these plants were watered with the same strong solution for 60 days in succession. Then the Professor experimented with a view to ascertain what amount of salt was really beneficial to his plants. This he did by watering separate patches with a salty solution, and found that cabbage, radishes, onions, beets, and other bulbs, when watered frequently with a solution of 24 grains to the pint, made rapid growth, were more vigorous, and grew half as large again as those he had watered with the same quantity of unsalted water. These experiments he repeated many times, and always with the same results. Grasses are quite sensitive to the action of salt, and are greatly benefited in some situations by a moderate annual supply. Six bushels to the acre, as a top dressing, is considered a fair supply on English lawns, while for arable lands as much as ten bushels to the acre is the annual average. Of course, lands situated near the sea do not require so much as interior lands. It is pretty certain that the application of salt to the land tends to liberate the silicates. Accurate experiments made by Sinclair, more than 50 years ago, in England, show that he nearly doubled, in some instances, the crop of cereals by the use of salt; the barley on an unsalted acre producing only 30 bushels, while the contiguous and salted acre produced 51 bushels. Only yesterday one of the most intelligent and successful farmers informed me that when he took possession, some years ago, of the farm which he now works, he found it impossible to raise good oats; 30 bushels of poor light oats were all he could get from an acre, while his straw was dull or rusty. Acting on the advice of a friend, he salted an acre liberally as an experiment; the result was the corn nearly doubled on that acre and the rust disappeared, while the unsalted portions of his oat field were rusty, and the crop hardly worth harvesting.—*Correspondence of Utica Herald.*

Economical Farming.

With the extremely low prices which rule our markets for all kinds of farm produce the duty of every tiller of the soil is to study economy in his methods of working. Farming has the name of being a laborious pursuit and of keeping its followers too much out of the world by reason of the little leisure they can hope to win for recreation or for study. It might be made more remunerative and enjoyable if the farmers would more generally study economy in the application of labor to their land; the time has gone by, never to return, when much of our rocky hill country can be economically tilled for general farm crops; the smoother fields, the plain lands and the gentle slopes comparatively free from stones, must alone be used for tilled crops; then the fact must never be lost sight of that man's labor is the most ex-

pensive of all labor. A horse can do the work of from five to ten men in the field and the days of hand hoeing and spading are now to be confined to the gardening patch, where a horse has no room to turn around or to the gentleman's flower beds. Not only does the plough, harrow and cultivator do the work cheaper but vastly better than the old fashioned hand-hoe. One of the cleanest fields of corn we ever had the pleasure of seeing was one which never had been hoed; the work had all been done, and done exceedingly well, too, with the plough, smoothing harrow and cultivator, without any hand hoeing whatever. Potatoes can be raised, too, and kept from weeds without much hoeing, provided the land is suitably prepared and the tillage thoroughly followed up with horse power. Then another important point to be always kept in view is the manuring of the land thoroughly. It don't pay to raise poor crop; labor should be expended only on land that can be enriched, and operations must be confined to what can be done thoroughly and with a determination to succeed. "Success is a duty" in farming as well as in all other pursuits.

As for the question, what shall be done with our rocky hills? we have only time here to say that if not suitable for pasture they can no doubt be made available for timber, and all indications now point to a very great demand for all timber in the near future at very high prices. It certainly will not pay to subdue and till stony land, where much expense is involved, with the hope of raising ordinary farm crops at the low prices which are likely to rule.—*Mass. Ploughman.*

The Great Exhibition in Paris.

Abrided from correspondence of the Michigan Farmer. It was in the name of agriculture that the International Exhibition has been decreed, and this time it has been honored in the observance. The present agricultural display is as successful as that of 1867 was a failure. In the exhibition of breeding cattle perhaps on the whole the show is not superior to that of 1855. Despite the reputation of the French for lucidity of classification and simplicity of organization there is something to be desired in the way of more convenient grouping—exhibits are diversified, but this is in great part owing to the requirements of the general contest. The live stock was concentrated on the terrace of the Invalides; this building, on entering by the Quai d'Orsay, forming the background; on the right were the sheds allotted to the foreign; on the left to the French exhibits. The front rooms were devoted to cattle, parallel to them the sheep, and behind the latter pigs. Barn-door fowl were comprised in an alley of the background, facing the entrance. The machinery is dispersed, extending from the terrace of the Invalides by a covered gallery up to the palatial building on the Champ de Mars, and almost by the aid of annexes running round it. The products of agriculture have had naturally to be centred with their national sections.

The impression is forced on the visitor that agriculture in general has made rapid strides since the cosmopolitan contest in 1867. The progress is more striking in the case of this country; the marvelous inventions of England and America have stimulated French implement makers, many of whom turn out first-class work. But the United States has not forgotten her peculiar genius in studying the wants of agricultural life and reducing the cost of labor by special machines, whilst England, by her chemical discoveries, and agronomical experiments, has rendered agriculture scientific and rational. France is behind other nations in the application of science and mechanics to modern farming; not from deficient intelligence or ignorance of the necessities of the age, but from a lethargy rather than indifference, connected with agriculture, to a deficiency of capital for this branch of national prosperity, and perhaps, above all, to the excessive dearness of such primary matters as iron and coal. In France the seller lacks rather than the purchaser of machines; the market for agricultural implements is next to limitless; it is estimated that the agricultural community requires 200,000 plows per annum, and a provision of 200,000 sowing machines, and half that number of mowers and reapers.

The cattle show closed on the 17th, after remaining open for ten days. There were 660 exhibitors, owners of 1,700 cattle, 825 sheep, 400 pigs, and 2,668 poultry. France, England, Holland, Belgium and Italy were the chief nations that entered the lists. England has been reproached for not making a better display, especially in

Shorthorns, respecting which breed sharp controversies are taking place both in this country and Belgium. But it ought not to be forgotten that in these times of quarantine laws for stock returning to England, the owner of a prime lot can be understood to hesitate. The collection of French was then superior to that of English Durhams. On the other hand, the Angus, Suffolk, Aberdeen and Galloway, hornless races, attracted attention by the beauty of their form, and if their milking qualities are in keeping with their conformation, they would make excellent crosses in France. Studying the French cattle, it is beyond doubt that great ameliorations have been made in breeding; this is the most notable point; the progress would have been great only it is but now French farmers have found out that cattle are a source of prosperity, not a necessary evil. The old races are there transformed without losing their distinctive traits; judgment is displayed in the selections of breeding animals, the excellencies of one correcting the defects of the other.

The display of sheep was really splendid, those from England being positively magnificent. A superb Southdown ram has been secured by a French breeder; Oxford downs are very numerous and good; they combine the production of long wool with an excellent quality of meat. The Shropshire downs were absent; this is the more regrettable as they are to sheep what the Durhams are to cattle, they have a cosmopolitan character, adapt themselves to every climate, but, above all, are unrivaled for crossing purposes. English lots carried off the blue ribbons.

Coal Ashes as a Civilizer.

It is estimated that the city of Boston removes 100,000 barrels of coal ashes annually from the back yards of the dwelling houses, while large manufacturing and mechanical establishments cart away as much more. This immense quantity of ashes is generally used in "filling up" the waste places of the city to street level. A good part of the Back Bay territory, upon which now stands some of the finest public buildings and private residences in the city, is made from coal ashes. Coal ashes as a civilizer is but imperfectly appreciated. So far as the Back Bay territory is concerned, that property has grown in value from \$8,000,000 to \$40,000,000 in the past twenty-five years. If splendid residences in fact, two or three entire wards of a city—can be planted on coal ashes as a foundation, is there not some way in which we country people can utilize coal ashes upon our worn-out or heavy soils?

In discussions on old soils and what they need, it has often been remarked that coal ashes has a good deal of virtue. One great want of the old soils of New England generally, and Massachusetts particularly, is potash. Coal ashes certainly contain a trifle of this, the result of wood used in kindling. Again, careful observers claim that all heavy soils need ventilation, or "lightening up," to permit the free action of air. A Nantasket man who had land so poor it would not spinde corn, applied coal ashes two or three inches deep, mixed with a little yellow loam, then plowed and harrowed, and in three years the soil was so much renovated that he cut a ton and a half to the acre of the best clover. In another five-acre field, where he applied leached wood ashes liberally, not much advantage was noted the first year, but the next year the benefit was very perceptible, which increased annually five or six years, when the meadow was plowed up. In a part of the field barn-yard manure was used, which ceased to show much effect the third year, while the ashes were effective for many years.

A compost of three parts of muck to one of coal ashes was used in alternate strips on another field, by way of experiment, and sown with clover, rolled, but not harrowed. Wherever the compost was spread the clover germinated and developed handsomely, while the strips without the compost were barren. On Long Island the farmers send vessels to the State of Maine to bring mixed ashes from wood and coal by the cargo, to enrich the famous vegetable gardens that supply the markets of New York. Perhaps it would be a benefit to our Maine friends were they to keep all their wood and coal ashes, and apply it to their own lands.

In Cambridge a gardener last year covered his very sandy land with fine coal ashes, and on this he put a layer of loam, all of which he spaded in. This month of June he has the finest looking garden he ever had. He thinks coal ashes did it.

Let us have the experience of such of our agri-

cultural friends as have experimented with coal ashes, and determine, if possible, if they have any real value in improving the soil or adding to its vigor or fertility. I find, with all our experimenting and investigating, that hundreds of the same problems that were discussed years ago still remain unsolved. Without presuming to call agriculture an exact science, still its progress is largely dependent upon scientific and careful research combined with practical measures.—*L. J. A., in Am. Cultivator.*

English Farming from an American Journal.

Take European farming, for instance, and contrast a simple fact or two with the same facts here. An English farmer rents his ground and pays from \$40 to \$100 per acre rent every year! In order to realize anything he must put on from \$5 to \$10 worth of guano manure or sulphites; and that, too, on every acre! When all things are considered, we do not believe he has any advantage over us, for where his chances are better in one thing ours are better than his in another. Yet English farmers actually get rich under all these disadvantages. True, his better and nearer market is offset by our richer soil, nominal rent or cheap lands. Our Western farmer of the Missouri valley, of all this region of Nebraska, Kansas, Iowa and Missouri, has no need to manure his soil. How, then, goes the English farmer happen to succeed? Firstly, every square inch of his ground is thoroughly farmed and made to produce. No extra steps are taken; no useless labor is done. Second, such crops only are put in as pay best. Third, in feeding not one ounce is wasted. All is carefully harvested and cared for. In feeding it is ground and cooked. Fourth, and chiefly, none but the best stock is kept. They don't go out and buy common stock, half grown. They go slowly, but surely. They raise their own stock from the best blood. Finally, the English farmer takes some good paper, full of the latest farming knowledge, gathered from all sources.

Clover and Chinch Bugs.

From my experience with chinch bugs the last two seasons I am well satisfied that grain fields, if liberally sown to clover at seeding time—say from fifteen to twenty pounds of clover-seed per acre, salt at the rate of half a barrel, and plaster from 100 to 150 pounds per acre—no fear of chinch bugs need be entertained. The salt and plaster give the clover a heavy and luxuriant growth, so that it completely shades the ground, to the discomfiture of the chinch bug. It is a frail insect, and cannot flourish except in the sunshine and with the ground clean about the grain roots. The salt and plaster not only make twice the bulk of clover that would naturally grow without it, but add from 20 to 30 per cent. to the grain crop. The salt hardens and stiffens the straw, produces a rank growth, and prevents blight, rust and mildew, and destroys all grubs and cutworms that come in contact with it. In 1876 I seeded three acres on one side of a ten-acre lot that was sown to Canada spring wheat with one bushel of clover seed and half a bushel of timothy-seed, well mixed. The result was it completely occupied the ground. After the wheat and grass were nicely up I sowed one half of the three acres with salt and plaster mixed at the rate of two bushels of salt to 100 pound of plaster. On the other half I sowed 200 pounds of plaster and no salt. The result was the half of the field that was treated with salt and plaster was much better than the half treated with plaster alone. The clover on the first was much of it headed out at harvest time and was a perfect mat. I cut it with a strong, light reaper called the Triumph, and one of the best machines, I think, manufactured. I kept the wheat from those three acres separate from my other wheat and threshed eighty bushels of a No. 1 article. There were no chinch bugs on the three acres, while the other portion of the field was nearly destroyed by them, as were all my other fields that year.

In 1877 I sowed clover seed on all my fields and treated all but one four-acre field with salt and plaster. The result was all the land thus treated produced a luxuriant crop of clover, a fine crop of grain and the finest possible pasture in the fall. In consequence of the last my animals all got fat, and I had a fine coat of manure on my fields to plough under. On the four-acre field, not dressed with salt and plaster, the clover killed out in spots, and the wheat ripened prematurely

in spots. On examination I found these spots black with bugs. But, on the whole, I got a fair crop of wheat from the field. I hold, therefore, that clover is the sheet anchor of success to the farmer renovating and enriching his land, and salt and plaster compose the great balance-wheel that will crown all his efforts. I mix the salt and plaster on the barn floor or in a box, at the rate of two bushels of salt and 100 pounds of plaster. When mixed I put it in my wagon-box, and, driving slowly over the field, apply the mixture from the rear of the wagon with liberal hand.—*N. Y. Herald.*

Smut in Wheat.

A correspondent in *Colman's Rural World* saved some heads of wheat for seed and took them home, but he noticed some indications of smut. He says:—

"When September 15th came, I rubbed it out, soaked it for three hours in a strong solution of sulphate of copper (bluestone), and dibbled in one row in the garden (soil, hillside, magnesian limestone clay). I kept the weeds down, and cultivated by hoeing both sides of the row. The result was a magnificent growth till near harvest, and then the smuttiest, rustiest and spottiest wheat I ever saw; and I felt like exclaiming, 'Put not your trust in bluestone, for in it there is no salvation' from smut, from rust, from spot. There are three diseases, or signs of disease, known by these names here, and, as I want to be clearly understood, I will try to describe them as I understand them.

Smut is that condition of wheat in which the beards turn into a black powder.

Rust is that condition in which the blades and stalk are covered with a red powder.

Spot is different from either. A whole row, or half the head, will be aborted, or empty. The other portion may be good.

There is one thing I noticed about smut last year for the first time. That is, smut is developed in the root before ever the head sees daylight.

Notwithstanding the want of success in this instance there can be little doubt of the efficacy of bluestone as a preventive of smut. It has been successful in innumerable instances. Still there may be and have been instances of failure in spite of every precaution. We have used strong brine, and the wheat then dried in air-slacked lime, and have found it to be very efficacious as a remedy against smut.

Climate of Canada.

The climate of Canada is little known outside the Dominion, yet sometimes an adventurous explorer visits this "Arctic region," and occasionally the truth is told. From an article in *Harper's Weekly* we give the following extract—a pretty fair sketch of the climate of the country:—

"In regard to the climate of Canada the most erroneous opinions have prevailed. The so-called rigors of the Canadian winter, which are advanced as a serious objection to the country, are frequently less disagreeable than the moisture and dampness that prevail farther south, while the heavy snow-falls are in every case a great benefit to the farmer. The spring, which begins in the middle of April, is a season of unusual beauty, and the summer is prolific in agricultural and garden products. From the head of Lake Ontario, round by the Niagara frontier, and all along the Canadian shores of Lake Erie, the grape and peach grow luxuriantly and ripen in the open air without the slightest artificial aid. The Island of Montreal is distinguished everywhere for the fine quality of its apples, and the Island of Orleans, below Quebec, is equally celebrated for its plums. Over the whole of Canada the melon and the tomato acquire large dimensions, and ripen fully in the open air, the seeds being planted in the soil towards the latter end of April, and the fruit gathered in September. As for the pumpkin and squash, specimens weighing over 300 pounds have been exhibited in the neighborhood of Toronto. Indian corn, hops and tobacco are common crops, and yield fair returns, while hemp and flax are indigenous plants, and can be cultivated to any extent in many parts of the country."

Late Planting of Corn Fodder.

Beware of late plantings. The weather is liable to be so dry and hot in August, not much more than half the corn planted will germinate, and that which comes makes a slow, sickly growth. Late in June or early in July is the best time to plant. Two or three cultivations are sufficient, as it soon shades the ground and thus checks the growth of weeds. The land is always left wonderfully clean and level after the crop is removed. Do not allow a severe frost to strike the crop before it is cut down. If you are compelled to let it lie on the ground for a few days after it is cut, frost can not hurt it, and unless the sun is very hot but little damage will be done. In winter a large heap of it can be hauled in at once, as the heating property of it at this season of the year is not very active, but it heats and sours more rapidly after it is cut up, and should therefore not be cut in lots of more than a ton and a half at a time. Slight souring only increases the cow's appetite for it.

Grasshoppers in the Far West.

As the season grows older the war upon the grasshoppers becomes more general all over the territory. In the Missouri valley the conflict has been long and fierce. The hoppers came out early and are now almost ready to fly, and should none of the winged armies from other sections come in the crops will be good, notwithstanding great damage has been done. On the Gallatin it was thought there would but few hatch out. The spring there being cold and stormy, the eggs did not hatch, but late advices inform us that during the hot sunny days of the past two weeks they have come forth in great numbers, and it is feared will yet destroy many crops. On other valleys they have not been so late in coming out, but have hatched at intervals; as fast as one army was vanquished by the industrious farmer another was ready for action. The damage already done, taking the territory throughout, will not reach a fourth of the acreage sown, and if the defence continues as successful the remainder of the season the harvest will be good.

The Wheat Outlook.

King & Co., of Toledo, take a rather blue look at the situation. They say:—

"The plethora of wheat in California seems to threaten as much embarrassment as does the crop we are soon to be called upon to handle, and the immense prospective shipments from the Pacific and Atlantic coasts, following close upon the present heavy movement and large accumulation now in English warehouses, together with recent failures of English grain dealers, are among the causes that are depressing values in all markets—causes the effects of which will require war or very discouraging prospects for the growing English crops to even partially counteract in the near future."

A correspondent writes from the Paris exhibition: "When I state that agriculture is as brilliantly lodged at the exhibition as the fine arts or any branch of industry, this is equivalent to saying that, perhaps, never has the practice and science of agriculture been better presented for international comparison. While some of the exhibits may lack want of concentration, this will not interfere with exhaustive study; the visitor will have to traverse only a longer gallery. The specimens of English and American farm machinery are superb; here competition will be sharp; the workmanship and finish suggest instruments, rather than implements. A glance also at foreign manufacturers' lots reveals much progress, and much yet to be achieved."

It is said that Dr. Chevalier of Norfolk, England, observing some very fertile ears in a crop of barley, separated them from the rest, and, by sowing the grains separately, gradually propagated the variety which goes by his name. Its prolific quality has been tested by the extraordinary fact that 380 stems have issued from a single grain.

Lands in pasture upon which stock are grazed, are less liable to be over-grown by rubbish, and this is one of the strong arguments in favor of pasture and stock. Nothing "cleans up" a farm so nicely as sheep and cattle. When we learn to cultivate less land and do our farm work better, we will have more acres to seed to grass.



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.

SIR,—We have (mostly) a good crop of wheat—Clawson variety almost entirely. I have tried Arnold's Gold Medal. It has done well, but not like the Clawson. You in Canada can raise as good crops as we do if you will do justice to your land. When I have been in Canada buying sheep I have been struck with the natural goodness of your land, killed with water. Want of draining is one of your great drawbacks. When I came here, twenty-eight years ago, my first crop of wheat averaged five bushels per acre; or, I had two hundred bushels on forty acres of land. Last year I had forty-four bushels per acre, average, on forty acres of land, and the same field. I have not been troubled with Hessian fly. I sow late—begin to sow the 20th of September. All the early sown wheat was more or less injured by the fly, and some very badly. I have sown phosphate to good advantage, and think and know that it has benefitted my crops very materially. It makes the crop ripen more evenly, and I think, and so do my neighbors think also, that it prevents the ravages of the Hessian fly, and I have one field of very heavy wheat, after wheat which last year was slightly touched with the fly that this year is altogether free from fly, and is a capital crop. I wish you could see my currant bushes and quince trees. I have had currants by the bushel and no currant worm. My quince trees are full of very fine orange quinces. No twig blight on my apple orchard, and the fruit fine. Now all this I attribute to a free use of coal ashes round the currant and quince and apple trees. I have not used helebore on my currant bushes, and before I used coal ashes my currant bushes were all eaten up and the fruit was very soar—hardly fit for the pigs to eat. My quince trees were formerly destroyed by the borer, and I hardly procured quinces enough for my own use. I now sell large quantities out of the garden of quinces—sometimes seventy to eighty dollars worth. What I have done others can do likewise by using the same means. I have much to say, but I must not tire you. I commenced to cut my wheat on the 8th inst, and have one hundred acres cut. I cut my barley on the 11th, so you see we are early this year.

Yours, &c., R. J. S.
Rose Hill Farm, Geneva, N. Y.,
July 19, 1878.

Sowing Grass Seed with Turnips.

SIR,—Would you kindly tell me in your next issue how you can sow grass seed with turnips successfully, as I see in many farmers' papers this plan advocated to ensure a good catch. If sown at the same time with the turnip seed, how is the hoeing done? The whole operation is a puzzle to me. As you see, I am at present in England, where I have come on a visit till the fall, and I have your paper forwarded to me. The hay making is nearly over, and the late fine weather has saved most of the crop in nice order, and a heavy one it is, too. The grain crop has suffered rather from a superabundance of rain this spring, and it requires some warm weather to fill out the ears. The Royal Agricultural Society holds its Show here next week, and I expect to see something worth seeing. I hear there are great improvements in machinery this year, and there will be a fine show of cattle. Hoping this will interest you, I remain yours,
A WELL-WISHER.

Clifton Park, Bristol, England; July 1, '78.

[The principal object of sowing turnips with grass seeds is by this means to secure a good catch of grass, which is often not easily secured in this climate, with its generally dry summer. By this means the ground, and, with it, the young grasses, are shaded by the turnip leaves after a few weeks. For either crop the land should be well prepared,

and the more is this necessary when both are sown together. The best preparation is to fallow, manure and plow the land in autumn, and leave it in rough, dry ridges during the winter; then in spring cultivate it thoroughly with the cultivator. This brings the land into good tilth and cleanliness. If the autumn plowing and manuring have been neglected, the spring tillage must suffice, and if farm yard manure be applied, it is necessary that it be well rotted. Raw manure would not only be useless—it would be positively injurious. It would be a means of permitting any moisture in the soil to evaporate. The seed, when sown with grass seeds, is sown broadcast on the flat with the same machine that is used for sowing clover and grass seeds. Sometimes they are sown with the hand, but it is a mistake to sow them evenly. Sow the seed, if possible, when the soil is yet fresh from the tilling; this is an important matter in the sowing of any seed in dry weather. Cultivate for the seed, and sow it early in the morning and late in the afternoon, but never during the heat of the day. This is very important. An old English farmer says he knows an instance where the most signal success has attended this mode of operation, and where the manager has never failed to secure a plant. This rule we always follow. After sowing the seed and covering lightly with a seed harrow, roll the ground; it aids in the detention of moisture in the soil. We have known instances of this mode—sowing turnips with grass seed, but it was only between stumps, after the logging, and the result was about half a good crop of turnips, with a good catch of the grass seeds. But we cannot expect a good crop of both. The turnips especially will not be more than a half crop, as they can not get the necessary hoeing and tillage. It is said that when the turnips are pulled the grass will spread and cover the place that they had occupied, but we would not leave a foot of ground to chance, such as this. All the land should have its due share of seed.]

Potomac Fruit-Growers.

JULY MEETING.

The specimen tables were well supplied with seasonable fruit. Of them we noticed Prince's Early, Beatrice, Hungerford, Sweet Bough, Juncunda Straw, Howett, Astrachan Red, River Pea, June and Edward's Apples; Amsden and Troth Peaches; Philadelphia and other Raspberries; Wild Goose Plums, etc., etc.

Dr. Howland read a paper on

WHAT WE DON'T KNOW ABOUT FRUIT-GROWING.

NOTICE 1. Some things which we don't know, that we can know.
2. Which neither we nor others know, but which must be known before fruit-growing will always be a success.

Thousands of tree and vine planters have spent thousands of dollars and made a failure of fruit-growing, because they were ignorant of the best and most successful varieties; when this dear-bought experience might have been avoided, and the best methods and varieties have been learned by consulting intelligent fruit-growers and nurserymen.

Many don't know how to keep their trees from the depredations of insects, when the "how" may be learned from any standard work of fruit-growing.

"That to grow trees and fruit the orchards should be cultivated and fertilized in a similar manner as of a field corn, from which a full crop would be gathered.

How to pick and market fruits in the manner and condition to realize the most money; which knowledge could be learned from intelligent fruit-shippers and commission merchants.

On the second head I remark:

We don't know how to grow in the Potomac region such fruits as Esopus Spitzenbergs and R. I. Greenings, etc., when they are grown so successfully in other localities.

Why certain fruits can be grown successfully in some localities and not in others, or why some varieties are a success for a number of years and then fail, and afterwards are grown successfully.

The cause or remedy of many of the diseases and blights that destroy our trees, vines and fruits:

Examples.—A friend settled here some 25 years since in the eastern part of the District of Columbia, and planted a vineyard of Catawba grapes. The vines produced abundantly for many years, and from which he realized a small fortune; when, without apparent cause, the vines mildewed and

grapes rotted, both on the old and young wood. This continuing for several years, the vineyard was abandoned.

Within a mile of Mt. Vernon Springs during the last six years I have set out over 3,000 Apricot trees, and the blight has nearly destroyed them all. But not like my Catawba friend after he had realized his fortune;—for instead of a probable income of \$5,000 a year, I am many thousands of dollars out of pocket.

With all the investigations with the microscope and the experiments of fruit-growers, we are as much in the dark as ever as to the cause and remedy of blight.

The depredations of many insects also are still beyond our control, and every failure should be a warning to others not to follow the same path. We should investigate every unknown cause, and give the world the benefit of our failures as well as our successes.

Millions of dollars might be saved to the United States if original investigators were employed to discover the unknown cause and remedy; but for the investigators of all this great and widespread destruction, our agricultural department employs one entomologist and one microscopist.

If ten plantations of fruits should be made in different parts of the country, and ten microscopists be employed to investigate the causes of blight, etc., millions of dollars would be saved to the country; and a similar course should be pursued in regard to the cholera in hogs and fowls, from which cause the State of Ohio alone, during the last year, lost millions of dollars.

In fruit-growing many fail; but more will succeed, and the balance sheet will be largely in favor of the persevering. The more we know of the laws of nature, and live and work according to them, the greater will be our success and happiness.

G. F. N., Washington, D. C., July, 1878

SIR,—You make two mistakes in announcing my report of the July meeting of the Potomac Fruit Growers, viz: you call me Mr. Newman, and speak of me as Secretary. I am simply an enthusiastic horticulturist, and report the proceedings in a condensed and readable form, *con amore* and *pro bono publico*.

Everybody should raise fruit, and the more information that can be diffused, the more intelligently will "everybody and his wife" cultivate the fruits.

I would be pleased to receive catalogues from the nurserymen of Ontario.

N. F. NEEDHAM, Washington, D. C., 1878.

How to Free Land From Weeds.

SIR,—Will you be good enough to give in the next number of the ADVOCATE some directions as to the best and most expeditious method of freeing land from weeds. Cockle, mayweed, mustard and others had possession of a large part of my farm before it came into my hands. Besides there is in one corner of it a large space covered with Canada thistles, and one field has much quack grass in it. The land is a light sandy loam.

A YOUNG FARMER, West Williams, July, 1878.

[On a farm so entirely overrun with weeds as the one you describe yours to be the only thorough remedy is fallowing—either bare fallowing, a seasons work, without any crop—or green fallowing. For very dirty land, such as yours is it will perhaps be found necessary to have the recourse to the bare fallow for that which is most infested with weeds, especially those parts where the quack grass and the Canada thistle have taken hold. They can be best eradicated by a summer fallow. Plough the land in Autumn shallow, and harrow it. This will cause the seeds of weeds that are on or near the surface to germinate. Then plough deep in the fall, throwing up the ground with rough scores in high ridges, to remain so till the early spring. Then cross plough and leave it so till your crops are all planted and sown. By manuring and sowing this fallowed land with turnips &c. you would have a good green fallow, and the cultivating between the rows would free the land of any weeds except such permanent roots as quack grass and Canada thistles. By sowing rape and grass or rye seeds instead of turnips and pasturing it with sheep in the fall, and again in the early summer you would be able to keep down any weeds, if not to kill them. Such cultivation would improve land permanently.]

SIR,—Whilst reading some back numbers of your excellent paper I came across an article on Hereford cattle. In reading the article I was greatly surprised to find it stated, "The oxen are in great repute for purposes of husbandry, the ploughing in the county of Hereford being almost entirely done by them." Now, sir, as I have resided in the county of Hereford for upwards of 20 years, and as my father has been, and is still a farmer, dealer and breeder of Hereford cattle, you will doubtless allow that I should know a little on the subject, I therefore wish to inform you that your information must be wrong as oxen are not used at all for the purpose of agriculture in Herefordshire or adjoining counties. The article is pretty correct in other particulars, but the dairy is made a source of profit more than formerly, butter made from Hereford cows being worth two shillings per pound in Hereford market during the winter months, during the time butter is in such demand. The calves are fed on skim milk, with the addition of linseed, or Thorley's food for cattle, about one ounce of the latter being fed to each calf at each time of feeding (cost of the condiments being one halfpenny per calf per day). This food is a great favorite with Herefordshire stock keepers—(Thorley's). I hope you will pardon me for drawing your attention to an article so old, viz: Sept. 1876.

C. R. F.

SIR,—I thought you would like to know how to get rid of those vermin on hens, for two years we were annoyed most dreadfully with them so that we dreaded going to the barns, and they killed a number of chickens after they were large enough to kill.

We just took a day to it and made a complete job, we boiled water and scalded every roost, and at night we caught every hen and turkey about the place, and put a little blue ointment under each wing and dusted a quantity of sulphur and carbolic powder through their feathers, and we have got rid of the pests, we also put some sulphur in the nests of the sitting hens. 3 oz. of blue ointment, ½ lb. sulphur and 2 oz. of carbolic powder is enough for 50 hens and only costs about 50 cents, it pays well as the vermin hinder the hens from laying.

BINBROOK.

SIR,—I fear you will think me a troublesome correspondent, but as I like to improve by the experience of others, that others would be like myself who read your valuable paper.

I tried your recipe for destroying the worms on the apple trees, and it worked like a charm. I made my hired man give them a thorough dosing of the weak lye and soft soap, and we had no more of them. Last year they stripped my trees clean. I see trees the same this year, while there is not a worm to be seen on my trees. I think it helps the trees also. We washed the trunks but with a weaker mixture.

As I thought some of your readers might be troubled to get a good catch of timothy and clover on the hills in dry seasons, as I have, I thought I would just say how I have such spots treated in the winter when the snow is light. I have a heavy coat of manure drawn and spread evenly, and as soon as the ground is fit in spring I have it sown with the grass and clover seed; a little hardy grain, rye or oats, is a good addition. The whole should be well harrowed. I had several spots treated in that way this spring, and now it is nearly as good as the rest. The timothy is out in head. I did a piece in that way, about one quarter of an acre, in my pasture. The cattle or horses did not trouble it. I think the quantity of fresh manure prevented them eating it, as you always find they do not like to eat grass when it is matured.

B. Binbrook, July 3.

SIR,—Please inform me about the Globe Lightning Rod Co., where their headquarters are and whether Insurance Companies give any preference to parties who use lightning rods. LOBO.

[The Globe Lightning Rod Co. is an incorporated or chartered Association, with a capital of \$50,000. The names of Board of Directors are:

J. F. Mahon, of Johnston's Bank, London, President; C. B. Hunt, Forest City Flour Mills, and Hunt Bros., Vice-President; J. H. Smallman, of the Canada Chemical Works, and of Smallman & Co., London, Secretary and Treasurer; S. Hewitt, gentleman, and T. C. Hewitt the present Managing Director. The works of the Company are permanently located at the City of London, on King Street, where the copper rods of the Company are manufactured.

Insurance Companies always give a preference to the best risks. Buildings protected against destruction by lightning being better risks than those not so protected, Insurance Companies certainly prefer these that are protected. On this subject see Mr. Cody, the inspector for the Agricultural Mutual, now London Mutual Insurance Company, whose opinion is published in the annual statement of that Insurance Company.]

SIR,—In one of your ADVOCATE'S you mentioned that there were stores in New York where a high price was paid for good butter. Will you give me the address of some of them. What will keep cows from drying up? AGNES, Drummondville.

[The only prevention of cows drying out is an uninterrupted supply of good food, and on a farm the best and most effectual way to obtain this is by soiling. Have a regular succession of such crops as are best adapted for mowing and feeding green. The climate of Canada renders it necessary to have other food than pasture, for one milk cow, at least during the heat and drought of summer. Wheat, bran and corn meal are, each of them, good for increasing the produce of milk and improving its quality, but on every farm an abundance of good rich forage can be grown for green-feeding. Fall rye sown in September may be mown early in May. In succession oats and peas come in, then clover, succeeded by corn, millet and hungarian grass.

We do not think there would be a profit in sending butter from Canada to New York. It is true fresh "gilt-edged" butter brings a higher price there, but the expenses—freight, commission and duty would most likely overbalance the increase of prices.]

SIR,—Trusting that notes on the farm are of interest to you as well as to farmers generally I send you the following: I have just finished cutting eight acres of wheat of the Scott variety, four acres were sowed the last week in August, and four acres were sowed the 12th of September; that part that was sowed in August was damaged considerably with the fly, while that sowed about two weeks later was not damaged at all. My advice would be to have the ground under a good state of cultivation, and sow from the fifteenth to the 12th of September in order to escape the fly. I would like to hear the experience of others during the past year on this subject. My wheat will average 30 bushels per acre. Wheat in this neighborhood is unusually good this year.

A SUBSCRIBER, Charing Cross, July, 1878.

SIR,—I saved last fall, very late, six bushels of Arnold's Victor wheat for the exhibition at Paris, I saved earlier a quantity of Seneca, have given both the same cultivation; the Arnold's Victor excels the other, the heads are fine and compact and will yield a very large crop. I can recommend it to my brother farmers for seed this year.

J. H. B., Beamsville, July, 1878.

SIR,—I see in your last ADVOCATE an article on the buckthorn—as to its merits for hedging, etc. I would wish you to state when the seed can be procured, and at what price can they be had, and from whom; or what the sprouts cost per 1,000 and when procured. P. McN., Wallace, N. S.

[Sprouts can be procured from any of our nurserymen or the seeds from the seedsmen. The seed is quoted at about \$1.50 per lb., and one year old plants are about 75 cents per 100.]

SIR,—Perhaps some of your readers would like to know how to destroy black rot on plum trees. Bore an inch hole nearly through the tree about a foot from the ground; fill the hole with brimstone and powder; make a plug for the hole; it will soon grow over; then cut away the parts affected until you come to the grub, as there always is one, and you will get rid of the rot. This is a sure cure.

B

It is a fact first observed and made known by an English farmer and agricultural writer, Mr. John Hannon—recently deceased—and widely confirmed by many experiments during several years past, that the latter stages of the ripening process diminished the proportion of flour and nutritive value of the wheat. The time to secure the best grain is when the kernel is still soft enough to be crushed, but is comparatively free from moisture, and breaks into meal between the thumb-nails.—*American Agriculturist.*

The Apiary.

The Bee Moth.

The injury done by the miller and its progeny of worms can hardly be estimated. Young colonies, and especially weak ones, often become a prey to the moth, while members of old hives are often greatly annoyed by them. But old stands are rarely overpowered or destroyed by them. They are often found in such hives, but the bees gnaw them out, and they do no real harm. Undoubtedly, before the advent of the bee moth it was comparatively easy to care for bees. Then weak swarms could be saved and nursed into good stocks, while now they are quite sure to be destroyed by them. If a hive becomes destitute of a queen, or reduced in numbers, it is soon overcome. Much time and trouble may be saved to the bees by looking out and destroying every worm, especially in the spring. As they have four generations in one season, every one destroyed at this time sensibly diminishes the number. Numbers of them hide in "patent moth traps," and it is a good plan to catch them; but so many are allowed to hatch there by the careless bee-raiser, that it is useless to recommend them. To indolent beekeepers they are worse than useless, and painstaking ones do not have any use for them. When a hive contains more combs than the bees can cover, the millers have a fine chance; and when a large hive has but a small colony in it, there is then a fine shelter and rich harvest for them. Hives should be made very tight about the top, as when the moth enters at this point it is going to be some trouble to get rid of. Too much care cannot be taken about this matter. If they once get the start in a hive, it is gone beyond recovery in a short time. The industrious bee-raiser finds the moth the greatest trouble and worst enemy of anything else pertaining to the business.

FEEDING BEES.

The best substitute for honey that can be found for feeding bees is sugar melted down into candy. The bees take no more than is necessary to sustain life, yet will never starve while they have it at easy access. Various opinions as to what bees ought to be fed on are before the public. Different persons have different notions on the subject—all perhaps good enough—but we will recommend, besides the above, another which is very good; it is rye meal. In some sections it is a great help to bees to feed them on this article before the first pollen-yielding flower comes. There is often found a great deficiency of bee bread in a majority of hives in the spring, and here the advantages of feeding on rye meal can hardly be over-estimated.

As soon as the bees fly freely in the spring, put the meal in shallow boxes or troughs a short distance from the apiary, and attract the bees to them by pieces of empty comb laid near by. They soon learn the way to it, and take it eagerly until flowers come, when it will be abandoned. The rye should be ground, and not bolted. Wheat flour will be taken by them, but not so readily. Meal-fed bees will send out larger and earlier swarms than others, because the abundance of bee bread encourages the rearing of brood.

Many other points are yet unmentioned, but our limit will not admit of our investigating the subject to a further extent, at least not at this time. We heartily recommend bee-raising to all who wish a healthy, pleasant and profitable employment.—*W. A. Graham, in Ohio Farmer.*

WINTER VERSUS SPRING WHEAT FLOUR.—It is an exploded idea that New Process flour cannot be made from winter wheat, and we quite agree with Mr. Abernathy, who, our readers will observe, states in the present issue that "patent" flour can be made from good grades of winter that is fully equal to spring wheat flour. We are hardly prepared to follow him, however, when he gives the palm of excellence to winter wheat flour. The fact that many bread-makers do not succeed well with flour made from spring wheat is because they do not know how to handle it. They generally knead it the same as they do winter wheat flour, which is unnecessary, since it has a greater percentage of gluten. An ordinary bread-maker will knead a strong spring wheat flour to death; for no matter how strong a flour may be, the elasticity of the gluten can be destroyed by too much kneading. Remember this when your customers complain that they cannot make good bread from your strong flour.—*American Miller.*

Stock.

Care of Young Stock.

At no time is the stock breeder so liberally rewarded for his care and attention as he is for that bestowed upon his young animals during their first winter. The treatment a calf or colt receives the first year of his life always shows afterwards. Take either, and let it be exposed to the cold rains and snows of winter, on scant food, and it will, as long as it lives, bear the ineffaceable marks of such treatment; it matters not how good the care and attention bestowed upon it afterwards. True, they will "pick up" and "come out" with generous feeding and good care, and even make good animals, but it matters not how good they may become, they would have been better had it not been for the first hard year of their life. An instance of this kind came under our observation a few days ago; we were looking at two promising young thoroughbred fillies; both had been left the first winter of their lives to pick up a living pretty much as they could. They afterwards fell into the hands of a liberal feeder and began to improve from the day they went on his farm; now for untried three-year-olds they are as promising as any in the State, and in all probability both of them will make successful race animals. "It hardens 'em and makes 'em tough to let 'em rough de first winter," said the old darkie who had them in charge when we were looking at them. "Do you think so?" we replied; "would you not change them in some respects if you could?" we asked. "Oh, yes, sir, I would make 'em a little bit heavier in the muscles, and I would stand 'em up a couple of inches higher." "Just so," we replied, "and if they had received proper treatment when young no fault could have been found with them; but both were stunted when yearlings and will not recover from it."

A short time back we were looking over a herd of shorthorns in this county, and were shown two calves, a yearling and a two-year-old by the same bull and out of the same cow; the only likeness they bore to each other was in color. We expressed surprise at the great difference in the form and finish of the two sisters. "Not at all strange," remarked the proprietor. "That calf," pointing to the two-year-old, a long-legged light-bodied and ragged-hipped heifer came in October, before I bought the cow, and evidently was half starved the first winter of her life, but this one," turning to the yearling, a fine specimen of the shorthorn beauty, "was bred on my place, and was well housed and well fed—both have received the same attention since I have owned them, both, as you see, are equally fat, but there is no comparison in the form, and the yearling at two years will weigh a third more than her sister." We are reminded of the above circumstance by the present cold snap, and the knowledge that farmers generally attach so little importance to the care of their young stock during the winter. No provision is made for them separate from the older animals—they are left to take their chances of getting their share of food (which they never get) out of the common feed-rack.

Leicester Sheep.

Among the imported breeds of sheep in Great Britain, the first rank belongs to the Leicester, which is the largest type of the long-woolled sheep in that country, and is more widely met with than any other. A few years since, when the whole number of sheep in Great Britain was 34,532,000, their numbers and classification were as follows: Leicester and their allies, 12,933,000; Downs and allies, 6,130,000; Cheviots, 4,368,000; Blackfaced, 5,101,000; Welsh, 2,000,000; and Irish, 4,000,000.

The Leicesters are not a more ancient race than either Lincolns or Cotswolds, but in the hands of Bakewell they were modelled into a type of animal that eventually impressed its qualities more or less upon every other variety of long-woolled sheep. The rams of the breed are in high demand for the purpose of crossing with other breeds; and the Leicesters possess remarkable fattening qualities, while arriving at maturity at a very early age. Bakewell was first heard of in connection with this breed of sheep in 1760, when he commenced a system of letting rams, as distinguished from selling. In less than twenty-five years he achieved great success. Probably no better proof of the value of the Leicester could be afforded than the fact that in England they have superseded a vast proportion of the sheep of the country, while they

have also been extensively used to improve almost every other breed.

The Leicesters do not present in their outline the form of a parallelogram on four legs, as is often adduced as the best, but rather the ovate form. The fore quarter of the Leicester is remarkably well developed, the shoulders are wide and sloping, the animal stands close to the ground, the neck is short, so that the head is raised but little above the line of the back; the ribs are well sprung and the carcass very true, the hips well covered, but not wide and tapering to the rump, which is small; the back is covered with fat. With great capacity for external and rapid development there is little inside fat, hence Leicesters are not favorites with the butcher. Their great point is early development and accumulation of weight on a given amount of food. The forehead is flat and generally bare, or covered with short hair. Formerly a great point was made of bare heads, but now most breeders prefer to have close, short wool, which protects from the fly. The eye is full and prominent, indicating docility of disposition, the head is tolerably long and fine, while the ears are thin and rather long. The legs of mutton are not large, and there is a deficiency of meat. The skin is thin and very supple, while the wool is fine and fairly long.

The Leicesters are not a prolific breed, though they are fair nurses and generally affectionate mothers. In early days too many lambs were regarded as a great evil, and if the breeder left off with an equal number with the ewes they were well content. In these days more fruitful sorts are desirable. Leicester sheep, however, are esteemed for their value as ewes, and it is on account of the extraordinary influence they have exercised on most of the leading breeds that they merit a high place. This breed of sheep is not adapted to inferior soils, nor to wander far in search of food, nor to suffer occasional scantiness or deprivation of nourishment; but on all soils of moderate and superior quality and in good pastures they are extremely profitable to the breeder. The lambs are inclined to be tender and weakly, and are not quickly covered with a coat of wool. The fleece is also inferior to the largest weights of wool. Delicate temperaments, arising from over refinement, were the only signs of the above deficiencies. The actual weight is various, owing to the larger and smaller varieties and of the treatment received. The fattened wethers of two years old will average from twenty-five to thirty-five pounds per quarter. The wool is of medium length, six to eight inches, and the fleece about eight pounds. The length does not enter into the first-rate combing wools, and for the purpose of worsted it is inferior to the wools of other breeds; but, being evenly grown, soft and of good color, and possessing several properties of long wool in perfection, it commands the highest price in England, and is quoted as the regulating standard.—*American Cultivator*.

How to Have Good Lambs.

A very reprehensible practice like the following prevails in some parts of this country: A farmer has a flock of ewes, and when the time comes round for lambs to be marketed, a butcher comes and the sheep are brought up to the homestead and he handles them so as to pick out all that are nice and fat. In about two weeks he calls again and does the same, and so the summer passes, when perhaps about a tenth of the lambs are left, being too thin for slaughtering, as they and their dams were too unthrifty to become fit for market. These lambs are kept in the flock, and the following year the ewe lambs become young ewes, the ram lambs having been killed for mutton, excepting perhaps one that may remain for use. This is no fancy picture; it has been done yearly in hundreds of cases until the lambs would not fatten and the flocks became so worthless that sheep were given up as not paying. The right way to manage a flock of sheep and have fat lambs is to look the lambs over before the butcher has seen them, and put about half of the best ewe lambs away with their dams and reserve them for breeding ewes, so that a corresponding number of old ewes can be fattened. By doing this every year the flock will rapidly improve.

With regard to the management of ewes and contriving suitable food, a farmer must look forward and provide what is necessary without being reminded of it by the bad condition of the flock. Of course, in the Northern States, where the winters are so long and severe, it is best to grow turnips so that some can be given daily, for there is in turnips or other roots that which keeps sheep

round in shape. But there are many who expect to have sheep do well without any forethought, and when the lambs are found fault with because they are not round and fat, they attribute it to any cause but the right one.

Doubtless, in a few years enough heavy well-fatted mutton will be produced in the United States for supplying the families and hotels in New York without obtaining it from Canada, as is done to a great extent at present; and when really good mutton can be had without so much extra trouble, the flabby young mutton which at this period is called lamb will not be eaten so much.

As England is taking so much of the best Canadian mutton at good prices, it is probable less and less will come from Canada to the United States in future, and there will be such a wide difference between the price of good and bad that our best farmers will aim to have the best breeds of sheep for mutton and lambs, as well as for wool.—*G. G., in Country Gentleman*.

Shorthorns and their Prices.

The Michigan Farmer, in reviewing the prices of seven important sales of thoroughbred Shorthorns, and considering the prices then paid for what constituted the ordinary farm Shorthorn and the Short Horn of the breeder, says:—

These sales seem to prove that all those bred from the early stock, and the individuals selected, crossed and mated by the still of the owner, still enjoy a consideration among breeders that no change can destroy. Within the past year there have been sold in England, heifer calves taken from this country at over \$22,000 each, or 4,200 guineas. Why is this? Because the breeding men get enough for their progeny to remunerate them, and because it is found that the size, early maturity, perfection of form, and excellence of constitution are so combined and so deeply bred in, that they are reliable for the improvement of all other cattle in these respects. They occupy the same position as the pure Hammond sheep do amongst the Merino breeders of breeding stock. Those who have given attention to this business and are expert in the science, will perfectly understand why these cattle rank so high and bring so much money. The breeders for the market use it whenever they can get it, because they find they can grow the beef they want to send to market the quickest, and get the most money with the least expenditure of feed, labor and time, the three elements out of which all money is made in any kind of business.

Impotence from Food.

A correspondent of the *Country Gentleman* gives an experiment by which a bull was rendered impotent, as follows:—"The effect of almost wholly carbonaceous food upon the breeding power of animals is very marked. Some years ago, having a bull three and a half years old, which I did not desire to use longer, I concluded to try an experiment upon his procreative power (which had been very strong), by feeding him as largely as prudent upon cheap molasses. His rations were made up at first of one quart of molasses, fed upon cut out straw, but the molasses was soon increased to two quarts per day. A quart of molasses was put into six quarts of water, and this water was used to moisten a bushel of cut straw. This sweet water rendered the straw very palatable, and the bull did very finely upon the ration. He appeared to lay on fat rapidly, and at the end of three months he became entirely impotent, manifesting no desire to serve. All strictly fattening foods should be avoided in the rations of bulls."

Canadian Cattle Exports.

From the *Liverpool Evening Express*: "Mr. Dyke, the Canadian Government agent at Liverpool, reports that 5,211 head of cattle, 401 horses, 3,318 sheep, and 838 pigs have been brought to Great Britain by the Canadian steamship lines during the six months ending June 30th. In consequence of the available space in these steamships being secured until September, 2,761 head of Canadian cattle, 963 sheep, and 386 horses have been conveyed by steamers sailing from Boston and New York, also 38 head of cattle and 213 pigs by sailing vessels from Montreal, making a total of 8,010 cattle, 4,281 sheep, 911 pigs, and 707 horses. The imports from Canada in the year 1876 were 2,767 cattle, 2,607 sheep, and 332

horses, but no pigs; and in 1877, 7,412 cattle, 6,325 sheep, and 373 pigs."

From the Liverpool *Telegraph* of the 2nd inst:—"The Dominion line steamer Mississippi landed 621 Canadian sheep yesterday in excellent condition. Mr. George Roddick, at Old Swan, to whom these are consigned, has made arrangements for 3,000 Canadian sheep to be delivered at Liverpool before the 15th August, in addition to which other large shipments are coming forward. A Government return recently published shows that 159,573 sheep were exported from the Province of Ontario to the United States in 1877. These were subject to a duty of 20 per cent. *ad valorem*. Vigorous efforts will be made to divert this trade to Great Britain. The Mississippi also landed 195 head of Canadian cattle and three horses.

Raising Pork.

When an article of general consumption commands a low price in market it is not always the part of good husbandry to abandon its production, but rather to investigate and see if by greater skill or selection the cost may not be cheapened in proportion. Thus, in feeding pigs, it is true the outlook for the high prices that prevailed during the flush years of the war is not favorable, yet thanks to enterprising and intelligent breeders, the farmers of this country may now obtain, at exceedingly reasonable prices, specimens of such pure and well bred pigs as will put on flesh in quantities far greater and at cost far less than that of common swine.

With pork at present prices no farmer can afford to breed, rear or feed coarse, heavy-boned, low-bred swine; and yet no farmer should abandon pork raising. Pigs consume material that would otherwise be wasted, while they probably convert certain kinds of food into meat as economically as any other animals. They are capable of remunerative returns when properly managed. Aside from the necessities of home consumption, it must be remembered that low prices always induce increased consumption, both at home and abroad. In 1876 the United States sent abroad \$39,664,456 worth of bacon and hams, \$5,744,022 of pork, \$22,429,585 of lard; while in 1877 the exports had increased to \$49,512,412 of bacon and hams, \$6,296,414 of pork and \$25,562,664 of lard.

The advantages of co-operation in agricultural matters could not be more practically nor more profitably illustrated than in the purchase by Farmers' Clubs, Grange Clubs, or even by a company composed of several individuals, of choice pigs for breeding. By the use among neighboring farmers of a single pure, well-bred animal, secured at a first cost of \$20 to \$25, for the purpose of crossing with and improving the common stock of the country, the profits of pork raising could be increased at least twenty-five per cent, and a business which, under common management, promises only loss, be made remunerative and satisfactory. Let farmers consider that, during the days of small profits, only those animals should be kept that give the best returns.—*American Cultivator*.

It is highly important to observe the utmost regularity in the hours of feeding cattle that are kept up, and also in the allowance given at those fixed times. Cattle become wonderfully observant on these points; are restless when the time for giving their food arrives, though until then they have been quite tranquil, and seem to have an instinctive perception of the sort of food which they are to receive at stated periods.

The sheep bites closer than the ox. He was designed to live where the other would starve; he was designed in many places to follow the other, and to gather sufficient nourishment where the ox would be unable to crop a single blade. Two purposes are answered by this:—All the nutriment that the land produces is gathered from it, while the pasture is made to produce more herbage than by any other means it could be forced to do; the sheep, by his close bite, not only loosens the roots of the grass and stimulates their spreading, but by cutting off the short suckers, causes the plant to throw out fresh, more numerous and stronger ones, and thus improves and increases the value of the crop. Nothing will more expeditiously or effectually make a rich, permanent pasture than its than its being occasionally and closely eaten down by sheep.

Barnyard manure is a nearly complete fertilizer in itself, containing all of the required elements of fertility, including potash, if it has been kept free from waste.

Dairy.

Refuse of the Dairy.

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

In the June number of the *Advocate* was noticed a leak in the dairy from not keeping up the flow of milk in the midsummer drought. It is proposed now to speak of another leak which often occurs in utilizing the refuse of the dairy. This is a smaller matter, but since the price of dairy products has become so reduced, every little item must be looked after that will in any way help to bring the ends of the year together. The defect lies, first, in the fact that in some factories the whey is thrown away without attempting to utilize it. This is worse than losing it entirely, because it engenders a noisome stench that affects the products of the factory. In other cases it is fed injudiciously.

The food of animals consists of two classes of materials entirely distinct in their effects. One builds up the body and the other supplies fat and heat. Sugar is one of the latter kind, and is the chief element of value in whey. It can do nothing toward replacing the steady waste of the body, and there is but a mere trifle of anything in whey which can. Whatever there was originally in the milk for this purpose has nearly all gone into the cheese. Animals which are young and growing fail at once on whey alone, because their bodies are so poorly nourished by it. Those which have come to maturity can stand it longer. But nothing can maintain health and vigor long on a diet of sugar and water, which are the chief substances in whey, and it is of little use to attempt to support animals upon it, yet this is a common practice at cheese factories and occasions a considerable leak in the profits. Some nourishing food should always be supplied to whatever animal consumes it, or it is fed at a loss. The best thing to supplement whey is oil cake, but this is too costly for feeding hogs, and besides, is not always conveniently obtained. But if calves are to be raised, it will pay to use oil cake in the place of milk. There is no substitute for milk which I have ever used, or seen used, for raising calves in a cheese dairy, equal to oil cake and whey, if used in the proper proportions—which are about a half pound to the gallon—and the mixture fed warm and while the whey is fresh and sweet. If pigs or shotes are to use whey, grass is the cheapest supplement to it. Grass furnishes the needed nourishment and has the further advantage of being bulky enough to distend the stomach, which is a circumstance quite necessary to animal comfort and prosperity. If a good grass plot can be furnished for shotes at a cheese factory, no other food than whey will be required. They will grow and fatten upon it, and turn the whey to the best account. If grass cannot be had in the vicinity of the factory, wheat bran is the next best thing that is always available. It is not quite as good as grass for swine, and is not quite so cheap, but it makes a very good supplement to whey, as it furnishes both bulk and the needed nutriment. If there is any convenient way for taking the whey home, it will be decidedly the most profitable to take it to the farms of the patrons and there use it with grass and other material which swine are accustomed to consume. It then becomes an adjunct to other food instead of the principal diet. In such a relation it gives the most profitable return.

The skim milk of the butter factories comes much nearer being a perfect food of itself than does whey. It has an excess of flesh-forming material in the curd, a cheesy matter of the milk, and has also sugar or its equivalent, but it lacks

fat. It will sustain life much longer, and pigs or calves will do much better on it alone than they will on whey only. But neither will do as well on skim milk alone as they will to have some other food with it. Skim milk has only half the feeding value of whole milk.

When whey is fed alone, as it often is to shotes of about 100 lbs. weight to begin with, it makes about 1 lb. live weight to 100 lbs. of whey, varying somewhat with the richness of the whey and the condition of the shotes. In an address by J. S. Van Duser, read at Cleveland before the American Dairymen's Association, last winter, it was stated that in the factories of Col. H. C. Hoffman, a large operator in creameries in Cheaning Co., the receipts per cow for whey fed to shotes is \$1 a season. Mr. Hoffman feeds some grain and credits to the grain the gain due to it. But he estimates that the grain this year is not paid for by the increase of weight it has occasioned, but it was necessary to feed it to put the pigs in a saleable condition. His net returns for whey are, therefore, put at less than \$1 per cow for the last year. This would make less than 1 lb. of live weight to 100 lbs. of whey, and make the value of the whey fall below forty cents for 1,000 lbs. A few years ago, when prices of pork were somewhat higher than they are now, Prof. Stewart made the net returns of whey for the season \$10 per cow. In this reckoning the gain was all credited to the whey and the cost price of the grain deducted from the net returns. Prof. S. reports feeding skim milk with proportional advantage, getting, when fed to pigs till they would reach 200 lbs. each, 1 lb. of live weight for every 15 lbs. of skim milk. Experiments in calf feeding, recently published, show parallel results. Where this can be accomplished it is better than making the milk into skim cheese. It takes about 15 lbs. of milk, fully skimmed, to make a pound of cheese, and at this time it would net so much money as the growth of pigs or calves. But usually, when fed alone to adult hogs, it takes from 25 to 40 lbs. of milk to make a pound live weight. Such is the difference in results from the mode of feeding and the selection of animals to consume the refuse of the dairy.

If young and thrifty animals are selected to consume the waste of whey or skim milk, and a proper supply of cheap food is given with it, and the waste fed while it is fresh and in its best state, it will make a considerable addition to the returns of the dairy, whether the milk is manufactured at the farm or at a factory. But if it is fed alone to unthrifty or old animals, and is kept till it is sour and stale, the results will be so nearly neutralized as to do little more than pay the trouble of feeding.

Half-Breed Buffaloes for Dairy Purposes.

The apprehensions hitherto entertained regarding the untamable nature of the buffalo, and that the characteristics of this branch of the bovine family would be certain to crop out through indefinite crossings, appears to be totally groundless. The buffalo, or more properly, the American bison, is being used extensively in portions of the State of Nebraska, bordering on the wild plains of the far West, for stock purposes, and half and quarter bred females of the bison family yield an abundant supply of rich milk. A remarkable feature connected with this cross of the bison with domestic cattle is the fact that the color of the bison and the majority of its distinguished characteristics disappear after successive crossings. Its outward conformation is also, in process of time, in a great degree lost sight of. The haunch or lump of flesh covering the long spinous process of the dorsal vertebrae becomes diminished with each successive cross, and will, doubtless, disappear entirely as the original type becomes merged in the domestic animal.

Neatness in the Dairy.

Quality is always a measure of value, and unless perfect cleanliness is observed the quality of butter and cheese cannot be of the best. The dairyman or farmer may not perceive any difference, but the expert buyer or the fastidious consumer will instantly detect inferiority in flavor, and hence be slow to purchase. Means for washing or brushing cows are rarely seen in a stable, and still less frequently is opportunity offered for cleansing the hands of the milkers. So that in the great majority of cases impurities invariably get into the pail, are dissolved by the milk, and become absorbed by the butter. Dairy men admit the value of cleanliness and skill; but are not always aware of what constitutes proper cleanliness. As a blind man has no conception of a brilliant sunset, so some persons cannot understand what perfect cleanliness and purity are. We were never more impressed with this fact than when visiting the Echo Farm Dairy, at Litchfield, Ct. There the stalls were cleanly sanded and without stain; not a loose hair was to be found upon the cows; the stable was spacious, airy and well lighted; the cow's udders were scrupulously clean; the milkers' hands were carefully washed before milking, and even the conversation of the hired men was clean, foul language or noisy talk being forbidden and avoided. The most scrupulous cleanliness was carried out in the dairy, every utensil was pure and bright, and the dairymaid who superintended the butter-making was a pattern of feminine neatness. No one, however fastidious or exacting, could object to the product of this dairy; and

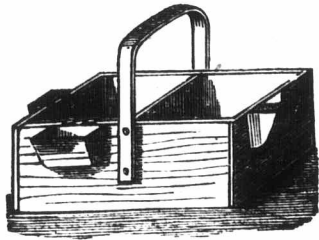


FIGURE 1.

there is no reason why the same methods could not be observed anywhere. A cottage can be kept as clean as a palace; and a very ordinary dairy can be made as clean as the Echo Farm.

We give herewith a few hints as to how this cleanly management may be practiced:—All droppings should be removed out at least once a day. The litter should be short, sand, sawdust or earth being better than straw. The cows should be cleaned, carded and brushed daily, and in the spring, when the coat is falling off, they should be brushed before each milking. The stable should be well lighted and kept whitewashed and free from dust and cobwebs. Before the milking, the udders should be brushed, wiped or washed, and they should be thoroughly dried at once to avoid cracking of the teats, and clear water be used. We find a brush, or a sponge, preferable to a cloth for this purpose. A small box, arranged as in figure 1, will be found convenient. A leather strap is fastened, as shown, for a handle. The box is divided into two compartments, to hold a card, brush, sponge and towel, and has a small

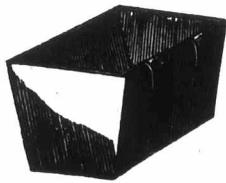


FIGURE 2.

pocket at each end to hold soap and some common cerate or ointment. A pail of water is taken into the stable; and to prevent fouling a common pressed-meat can (figure 2) is used to hold the water, the cover of which is clipped in such a manner that it may hang upon the side of the box. By this system the labor is very slight and a small boy or girl can go ahead of the milkers and prepare the cows. If the teats become scratched or cracked by accident, a little of the ointment should be applied to them, this being removed when the udder is cleaned preparatory to milking. There is no need to moisten a cow's teats to draw the milk easy; that is a practice to be avoided in well-conducted dairies.—*American Agriculturist.*

Feed for Good Butter.

The feed that produces the best butter is early cut hay. Clover, blue grass and timothy, cut early and well cured in the cock, with little exposure to the sun, is certainly the best fodder. Mixed with this may be given a daily feed of three or four quarts of meal, consisting of yellow corn and wheat bran in equal parts, or wheat bran and barley. When oats are mixed in the feed the butter loses color, and sometimes the cream is long in churning. Buckwheat produces white and tasteless butter, and no dairyman except a milkman should use it for feed. Sugar beets and carrots are excellent roots for butter; mangels, turnips and ruta bagas are objectionable on account of the flavor. We have found steaming the food an economy where the requisite help is at hand without extra cost, and if the feed is given slightly warm, it adds much to the compost of the cows, aids digestion, and increases the milk product. In our own practice we have found that carefully grown and well cured sweet corn fodder is equal to the best hay. The daily rations for cows that were giving one pound of butter daily during the depth of winter in our dairy were two bushel baskets of cut corn fodder, with three and one-half quarts of ground feed of corn and wheat bran in equal parts. Half of this was given in the morning and half in the evening. At noon 10 pounds of hay were given in the racks, and just before milking in the afternoon each cow received a pailful of cut roots, sprinkled with corn meal or bran. Each feed, except the hay, was sprinkled with salt at the rate of a handful to each cow. The butter produced was of a good color, and a pail which was kept over a year was as sweet and well flavored when opened as when packed.—*N. Y. Times.*

Cheese Making on a Small Scale.

For making cheese under any circumstances, a few things are absolutely necessary. One must have a vessel large enough to hold the milk. It may be any clean tub, boiler or kettle. A wooden tub is best, because it will lose least heat while standing. There must be means for warming, which can be supplied by a cook stove. Rennet for coagulating the milk must be provided and soaked beforehand. A strong hoop for pressing the curd, with a capacity of at least six cubic inches for every quart of milk used, and power for pressing equal to at least the weight of a ton. These being provided, warm milk in any convenient way without burning, to about eighty-four degrees, and add rennet enough to have it begin to curdle in fifteen minutes, and cover the milk to keep it from cooling. The quantity of rennet to use must be found by trial. A good rennet, well soaked and rubbed, in time, will curdle about 2,000 quarts of milk, but there is so much variation in their strength, that only an approximation to the quantity required can be made.

When the curd has become so hard as to cleave before the finger when passed through it, it should be cut with a blade that will reach to the bottom of the vessel, into columns an inch or so square, and then covered to let the whey separate. After it has stood fifteen or twenty minutes, the whey which can be conveniently removed, may be dipped off and the curd carefully broken with the hands into pieces the size of chestnuts, or even finer. When this is done, the whey which has been dipped off, or what is better, an equal bulk of water heated to 150 degrees, may be turned into the curd and stirred enough to make all parts of the curd warm up alike. The curd should be again covered to prevent cooling, and left standing fifteen or twenty minutes, or as long as it can be without sticking firmly together, when they may be again dipped off, the curd broken up fine again, and more hot whey or water turned on and mixed evenly with the curd by gentle stirring, so as not to roll the whey and waste the richness of the curd. Cover the curd again, and repeat the operation till the mass is raised to blood heat. The stirring should be repeated often enough to be prevent the pieces of curd from adhering, and the whole covered and left standing for the curd to harden.

When it has stood so long as to become hard enough to squeak between the teeth, or spring apart readily when pressed in the hand, or what is better, respond to the hot iron test, the whey may be at once dipped off, and the curd drained on a strainer cloth laid over something which will allow the whey to run away steadily; like a large sieve or a basket.

When the curd has been stirred until it is freed from whey, and becomes a little cool and the large

lumps broken up fine so it will all receive salt about alike, salt at the rate of one ounce for each ten quarts of milk. Mix the salt thoroughly through the curd, and then put to press. As soon as the curd is well stuck together so it can be handled safely, remove it from the press, put on a new press cloth, turn the under side up, fold the cloth evenly over it, and press again until the press is needed for the next day's cheese.

Upon taking it from the press, let it stand an hour or two till it becomes dry, then rub it over with some soft grease, and turn and rub daily until it is cured, which will be from thirty to sixty days. On small cheese for house use, no bandage will be required. The surface must be greased often enough to keep it from drying and checking.—*American Dairying.*

When milk is put into a pan and allowed to stand till it throws up cream, the portion of cream rising first to the surface is richer in quality, and greater in quantity, than that which rises in a second equal proportion of time, and so on—the cream progressively declining in quality, and decreasing in quantity, so long as any rises to the surface.

TRAINING CUCUMBERS ON TRELLISES.—Cucumbers are generally permitted, or compelled rather, to grow flat upon the ground, but vines have been trained upon trellises with the very happiest results. Indeed, nature never intended the cucumber for a mere surface runner, else it would not have been provided with clasping tendrils. A low trellis, keeping both vine and fruit off the ground, adds largely to the yield and the quality. When space is an object, a great saving of ground may be accomplished by training upon high trellises.

The following has been recommended as the best mode for preparing lime dust for slugs and other insects, for mildew, etc.: Take, say a peck of fresh or sharp lime, broken up into small pieces; then add four pounds of flour of sulphur, or in like proportions if in smaller quantity. Add one-third as much boiling water, or just enough to slake the lime to dry powder, and cover the vessel as soon as the water is poured on. By adding water, it may be made into an excellent whitewash for trees, the sulphur increasing its efficacy.

REMEDY FOR THE CURCULIO.—I have saved my plums a number of seasons by the following process: When the curculio is about to begin its attack, or as soon as the plums are the size of a filbert, I take a long-handled pan, put in it a quart of coal or gas tar and set it on fire. This I carry under the tree and completely smoke every part. I repeat this two or three times each week until all danger from the curculio is over. When a rain does not occur to wash it off, the odor from the smoke will remain in the foliage for several days. It takes but a moment or two to smoke a tree.—*L. D., Wisconsin.*

There are said to be over six thousand men, women and children engaged in growing early asparagus, lettuce, carrots, and the like, in and around Paris, upon land the rent of which varies from \$180 to \$240 per acre, according to the facilities for irrigation.

Quassia and soft soap will destroy aphides on roses, used by boiling four ounces of quassia chips for half an hour in a gallon of water, and when cold and strained adding two or more gallons of water and six ounces of soft soap. With this mixture syringe the bushes. Another improved remedy is tobacco water, made by pouring a gallon of boiling water on four ounces of tobacco and covering till cold. The shoots may be syringed or dipped in it.

Mr. Yates, of Manchester, England, has invented a horse shoe, composed of three thicknesses of cow hide compressed into a steel mould, and then subjected to a chemical preparation. It is said to last longer, weigh only one-fourth as much as the common shoe, never to split the hoof, and to have no injurious influence on the foot. It requires no calks; even on asphalt the horse never slips. It is so elastic that the horse's step is lighter and surer. It adheres so closely to the foot that neither dust nor water can penetrate between the shoe and the hoof. If all this is true, it must be a wonderful improvement on the old iron shoe.



The Family Circle.

"Home, Sweet Home."

The Country Cousin.

"And you really can make a pudding?" said Mr. Hamilton, as he drew his chair rather unnecessarily near the table where Maggie was at work.

"I really can," answered Maggie. "But what is there so very surprising in that?"

"Nay, I think it is very surprising," he said; "and I question very much if you could find a dozen young ladies of a certain class in all this great town of Winterbury who could say as much. And there's another mystery to be solved. How is it you did not go to the Stephens' this evening?"

"Because she volunteered to stay at home and amuse her old uncle," said Mr. Harrison, laying his hand, caressingly on her glossy hair.

"But it was no sacrifice," said Maggie, "for I did not want to go. I began quite to long for a quiet evening at home. You play chess, Mr. Hamilton? Ah, then, you and uncle can have a grand battle, and I will sit by and watch the game." But Mr. Harrison declared he had not finished his paper, and told the young people to try their skill till he was ready.

The game, however, progressed but slowly, and the supper tray came in before it was half over; and after that there was another hour of pleasant animated chat; so that when Mr. Hamilton at last took his leave, he left quite convinced he had passed a far pleasanter evening than if he had gone to a dozen balls.

"And what sort of an evening did you have?" asked Maggie, as the girls dawdled over a late breakfast next morning.

"Pretty well," said Sophy, languidly; "but I think I ought rather to ask you that. Pray, how long did he stay?"—the "he," of course, referring to Mr. Hamilton.

"Oh, he stayed to supper, and it was nearly eleven o'clock when he left," replied Maggie.

"How provoking!" exclaimed Sophy, pettishly; "and what in the world could you find to talk about all the time?"

"Oh, plenty of things," replied Maggie. "I think he was rather curious to know how sober damsels like me pass their time in the country; so I gave him a slight sketch of my occupations,—very much to his amusement, no doubt."

"And did you tell him you made the beds and hemmed the table-cloths?" inquired Harriet, rather spitefully.

"No, though I might have done so," said Maggie, quietly; "for I do both sometimes. And as it was, I only owned to being vulgar enough to know how to make a pudding."

"Really, Maggie," retorted Fanny. "I begin to suspect you are a very deep little girl."

"A very silly one," interrupted Sophy, hastily. "What would he take you for? I consider pudding-making about on a par with dish-washing, and certainly no lady would wish to do either."

"Then I suppose I am no lady," said Maggie, "for I must say I see no reason why a lady should not do both, if necessarily required to; and I know dear mamma thinks no girl's education is complete unless she understands housekeeping; and I am sure work is no disgrace to any one. But I beg pardon for speaking so warmly."

"Oh, there is no need," said Sophy, rather coldly; "it is not of the slightest consequence, I assure you."

While this little domestic scene was going on at the Harrisons', one somewhat similar took place between Mrs. Hamilton and her son. They had breakfasted early, as usual, and were seated on either side of a noble fire, burning in a grate of polished steel. She was a lady who might be between fifty and sixty, though her eyes were still bright, her cheek still smooth, and her figure queenly in its proportions and bearing.

"And who are these Harrisons?" she inquired, when her son had told her where he had spent the previous evening.

"He belongs to the firm of Greenwich, Harrison & Pardoe," he replied—"a respectable, well-to-do concern, and old Greenwich is as rich as a Jew; so is Pardoe; but they are bachelors, and the Harrisons are a large family."

"Grown up?" inquired Mrs. Hamilton.

"Grown up," was the reply. "At least, the girls are; the boys are younger, mere schoolboys, in fact."

There was a pause, during which Mrs. Hamilton gazed thoughtfully into the fire. At last her son broke the silence, rather hesitatingly, it seemed.

"There is a young girl, a cousin, I believe, staying with them at present."

"Yes?" said Mrs. Hamilton, inquiringly, as her son made another stop.

"She only came for the winter," continued Claude, in his turn gazing into the glowing embers; "and she will leave early in the spring, unless—unless I can persuade her to stay."

"Claude!" exclaimed his mother. "It was only one word, but there was a world of significance in the tone, and he drew himself up rather proudly, and met her steady look with unflinching eyes."

"My dear mother," he exclaimed, "why do you look at me like that? Have you not, for the last three or four years at least, been telling me that I ought to marry, and now that I am really thinking about it, you look as if I had broached some outrageous and unheard-of idea."

"Because you have taken me so completely by surprise,"

said his mother. "I have never seen—never heard of this young lady before; but if she is one really calculated to make you happy, depend upon it you shall meet with no obstacles from me."

"There's my own dear mother," exclaimed Claude, affectionately kissing her delicate hand; "and do not fear that I shall do anything rashly. I have not yet said a word to either Miss Cameron or her uncle. At present, all I want is that you should know her."

"I see but little chance of that, Claude," said his mother, gravely, "going out so little as I do; and it would not do for you to bring her here."

"No, I see that," said Claude; "and yet it must be managed. There is only one way—suppose you give a party."

"A party!" said Mrs. Hamilton.

"Yes, and invite the Harrisons," he replied. "Don't you think it would do, mother? They would be only too happy to come, and it would seem quite natural, as I have been there so often."

And so it was settled, and the Harrisons were in a high state of excitement and delight, and drove their dressmaker to the verge of desperation in their anxiety to have what Sophy called "killing costumes;" for Claude was an only son, and being distinctly related to a viscount, and on visiting terms with more than one of the "upper ten thousand," was considered by all the Winterbury girls as the grandest match in the neighborhood.

CHAPTER III.

An evening party at Deanley Manor was a different affair to a ball in St. John's Street, Winterbury. Here there was no crowding, no display, no striving after effect, but a certain quiet tone of refinement pervaded the establishment, and seemed to blend together every trifling detail into one harmonious whole. There was no regular ball, but the young people adjourned to the breakfast-room and got up a carpet dance, taking it by turns to play. Mrs. Hamilton was not so much engaged with her company that she could not find time to observe Maggie, and the result of her observation was so favorable that she determined to see more of her.

"My son tells me you are leaving Winterbury in a short time, Miss Cameron," said Mrs. Hamilton, when she had by a few adroit questions obtained a considerable insight into Maggie's thoughts and fancies. "If it were not asking too much, I would invite you to spend a week with me before you leave, for I am so very fond of the society of young people, but for whom we should be so very quiet."

"Oh, I do not mind that in the least," said Maggie, with childish eagerness. "I am so fond of the country, and if my aunt has no objection—"

"I will ask her myself," said Mrs. Hamilton, "and the carriage shall come for you on Monday morning."

A very few words sufficed to obtain Mrs. Hamilton's consent; and Maggie, who was becoming very weary of morning promenades and evening parties, looked forward with delight to the idea of a short sojourn in the country, although Mrs. Hamilton laid great stress on the fact that she should be "quite alone," having made a special proviso that her son should go on a visit to some friends at a distance, and not return until she recalled him. The Harrisons girls were quite taken "aback," as Fanny elegantly expressed it, by Maggie's unexpected good fortune.

"Though after all," said Sophy, "it will be nothing so very delightful if you are to be shut up with an old woman all day long, and her son away, too. Oh, Maggie, she took care of that, depend upon it; and she only wants you to stop a gap; so it is not so very flattering."

"No, indeed," said Harriet, contemptuously; "but I hear she is a regular old-fashioned goody, who approves of young ladies making themselves scullions and kitchen maids; so I dare say you will get on very well together."

"Well, at any rate you need be under no trouble about dress," put in Fanny; "you can go as shabby as you please, now the young laird's away; though, to be sure, there may be a few callers after the party. However, I prophesy you will be glad enough to come back into the world again."

Maggie wisely held her peace, and gradually the scoffs and jeers died away; yet it was with unmixt feelings of pleasure that she saw the carriage drive up that was to convey her to Deanley. She found her hostess waiting to receive her with a truly warm and cordial greeting. Mrs. Hamilton was one of those rare beings who improve upon acquaintance. The slight reserve that characterized her manner with strangers wore off as she was better known, and she became warm, and even affectionate, in her bearing towards those to whom she took a liking, as she soon did to her young visitor.

"Do you know," she said one evening, as they sat by the library fire, "I think I took a sort of fancy to you because your name is Margaret."

"How did you know it was?" asked Maggie. "Oh, I suppose you heard my aunt call me so?"

"No, it was before then—it was before I had ever seen you," replied Mrs. Hamilton. "Claude told me."

Mrs. Hamilton glanced at Maggie as she said this, but the quiet face was perfectly calm and unmoved. She had evidently never thought of Claude as a lover.

"Did he? I wonder he should think of it," said Maggie. "Then you like the name of Margaret?"

"I love it as I love no other," replied Mrs. Hamilton; "it was the name of my dear sister."

"Then do call me so," said Maggie, eagerly. "It seems so formal to be called Miss Cameron."

"Perhaps I may, some day," said Mrs. Hamilton, with a smile.

That night a rather long letter was dispatched to Claude, and it contained these words: "I am not disappointed in her; and that, you know, is much for me to say on so short an acquaintance. Give me a little more time, and I shall be able to speak more decisively."

The week for which Maggie had been invited passed away far too quickly, for the pleasant morning rambles when the weather permitted, and afternoon drives, with the cosy fire-side evenings, were inexpressibly charming to a girl of Maggie's stamp. There was always some new book to discuss, or some village news to talk over, and occasionally more serious subjects would arise; and all tended to convince Mrs. Hamilton that Maggie was a girl of no common mind.

One afternoon, when the weather had changed and the thickly-falling snow made their usual drive impossible, Mrs.

Hamilton had been showing Maggie some of the art treasures, of which she had a large collection.

"How nice it must be to be rich!" exclaimed Maggie, as the last antique gem was replaced in its richly carved Indian cabinet.

"Never covet riches," said Mrs. Hamilton, gravely; "my happiest days were spent in comparative poverty." Then after a pause she asked: "Would you like me to tell you something of my past life? It is just the evening for a story."

Maggie assented with delight, and seating herself on a low ottoman, drew a little nearer to her friend and prepared to listen.

"I will pass over my early days," said Mrs. Hamilton, "for there was nothing remarkable either in my education, position or prospects. My father was the younger son of a noble house, it is true, but not a rich one; and moreover, he had irretrievably offended his friends by marrying a singularly beautiful and amiable girl of gentle descent but small fortune, in preference to one of immense wealth, plain person and unamiable disposition. However, he never repented his choice. We were a large family, but all died young excepting my dear sister Margaret and myself. In her seventeenth year she too passed away, and I was left alone to comfort my almost inconsolable parents. Two years after her death I became acquainted with my late dear husband, and in another twelve months we were married."

"Now came my time of trial, for which, I am sorry to say, I was but ill-prepared. My life hitherto had been easy and pleasant, for my parents, though not rich, were comparatively affluent, and I had never known the virtue of self-denial. My husband was a barrister, well born and well connected, but of very small independent resources, and briefs did not come in so quickly as we had anticipated. The consequence was that our expenses soon exceeded our means, and my husband told me this one day when I had been proposing to give a dinner-party."

"My dear Carolina," said he, "I am afraid we are not justified in incurring any additional expenses. You know how small my income is, and my professional gains do not keep pace with our requirements. I am very much afraid we shall have to retrench."

"Retrench!" I exclaimed, in absolute dismay, for the word seemed significant of nothing short of ruin and disaster.

"It will be nothing very dreadful, darling," he said, smiling at my tone of horror. "I thought perhaps we might keep fewer servants, or, at least, put down the carriage."

"Oh, no, not that!" I exclaimed. "Surely, Edward, it will not need that? We will give no more dinner-parties, and then we need not go to any. The children—for by this time we had three—will be a sufficient excuse for giving up visiting."

"I fear that will make but little difference," he replied; "however, we can try."

"We did try, and the experiment cost us dear, for in the end we were obliged to diminish our establishment far more than my husband had proposed, and in less than another year we were living in a small house with only two female servants and a gardener, who also waited at table."

"I may as well own-at once that I had at that time a good deal of false pride, and at first I made myself thoroughly miserable, and every ring at the bell sent me into a tremor lest our maid-of-all-work should not be presentable, or the man who fanned my fashionable friends looked coldly on me because my dress was less costly or my bonnet less stylish than usual. Yes, you may well smile, child, and I hope you are untainted by any such absurdities. There was another thing, too, that troubled me. My husband liked a good dinner, and I soon found that without some amount of personal superintendence that was absolutely unattainable. I was silly enough to think kitchen matters quite beneath the notice of any lady, and it cost my foolish pride many a bitter pang when I had not only to overlook, but even prepare with my own hands the soup or the pudding that I knew my husband had particularly fancied. I am glad you can make a pudding, my dear."

Maggie looked up with a blush and a smile, and Mrs. Hamilton went on:

"Yet it was very sweet to be thanked and praised for my efforts—so sweet that in time I grew more than reconciled to my labor of love; and I learned to dread more than anything the luxurious self-indulgence which leads so many wives in the middle class to pass their days in utter idleness, lounging on a sofa and reading novels, while their children are left to menials, and their husbands to the uncheered monotony of a weary, wearing toil."

"Time passed on, and gradually our affairs improved; so that, as is often the case, when once the turn came our tide of prosperity rose high and rapidly, and in a very few years' time our circumstances justified us in resuming and even exceeding our early style of living. Since then my life has been a prosperous and happy one, shadowed only by the one great sorrow of my life, which left me a widow, and, but for Claude, childless. But of this I cannot bear to speak."

The last sentence Mrs. Hamilton spoke so sadly that Maggie's eyes filled with tears, and for the first time Mrs. Hamilton drew her towards her and pressed a kiss upon her cheek.

"And now run away and dress," said Mrs. Hamilton, "for the second bell has rung, and we shall be late."

"I shall not be long," said Maggie; "and thank you, dear Mrs. Hamilton, so very, very much."

The next day was the last of Maggie's week, but, to her great delight, Mrs. Hamilton asked her to prolong her stay, saying, "I expect Claude home to-morrow."

"Oh, do you!" exclaimed Maggie, but with a look and tone almost of disappointment.

"Why, my dear child," said Mrs. Hamilton, laughing, "how grave you look! Most girls would receive the announcement in a very different manner."

"Oh, I beg your pardon," stammered poor Maggie; "I did not mean—that is, I was only thinking that we shall have no more such nice quiet evenings."

But Maggie was mistaken, and soon learned to think the evenings quite as nice, or more so, than they were before Claude came; and her cheek began to flush and her heart to beat at the sound of his voice or footsteps. And one day when they returned from a long walk together, there was something so new, so happy in her whole look and manner, that Mrs. Hamilton, taking both her hands in hers and looking earnestly in her blushing face, said softly, "I must call you Margaret now, I think."

Maggie's engagement was duly announced to the Harrisons, and received with very mixed feelings. Sophy was inclined to resent it; Harriet professed extreme disgust at what she called "Maggie's dreadful slyness," and Fanny declared all that vexed her was that she had not entered the lists herself. Mrs. Harrison, however, was delighted at the prospect of being so nearly connected with "the Hamiltons of Deanley Manor," and immediately began to plan various schemes of aggrandizement for her daughters, none of which took effect, and long after Maggie had been a happy wife and mother, the Harrison girls, who had been engaged a dozen times, at least, were still unwooded, unwed—a circumstance that did not improve either their looks or temper. Eventually, however, Sophy, growing in despair at her faded cheeks and scanty ringlets, which even bloom powder and hair restorers failed to renovate, accepted an ancient lover, who made her an offer under the combined effects of unlimited flattery and an extra glass of brandy and water. Harriet took advantage of a weak moment to entrap an unsuspecting curate, and Fanny turned devotee, in the forlorn hope of ensnaring a popular preacher. Still, however, as Sophy sometimes owns, when in a desponding mood, it is a most aggravating thing to be outdone by a simple Country Cousin.

THE END.

Minnie May's Department.

MY DEAR NIECES,—A cold chicken pie is nice to have in readiness for cold Sunday dinner, (which I advocate in the very hot weather). If the chickens are young, I joint them and season with white pepper and salt, sprinkling a piece with each. I do not stew them, but arrange the parts in a deep earthenware dish. After the meat is all in place a few bits of butter on the top or a few pieces of ham cut small, and pour in enough cold water to cover the meat. A little pounded mace is an excellent addition. Then put on a good pastry cover. I bake in a moderate oven for an hour and a half or two hours. When the pastry is done the oven door may be left open and a brown paper laid on the top of the pie. I never put in the breast bone or the back and neck, but boil down with a bit of bacon or ham bone, and take the gravy and put in the pie after taking from the oven, to supply the waste made by cooking.

RECIPES.

MUSLINS.

Delicately colored muslins should not be cleansed with soap suds, but with bran water. Two quarts of wheat bran boiled in a gallon of water will suffice for one dress. Strain the liquor and use it like soap suds; rinse in one water and do not starch.

PRESSING FERNS.

The chief obstacle to pressing ferns for in-door decoration is their disposition to curl up as soon as picked. It is best, therefore, to carry into the fields a folio made of white porous paper and covered with stiff pasteboard; the ferns may be put between the leaves as fast as they are gathered, and the stiff covers will hold them in shape.

BAKED APPLE DUMPLINGS.

Pare and core smooth apples of uniform size, and fill the cavity of each with sugar and a little cinnamon. Divide the paste into as many parts as there are apples; roll each piece out square, and enclose an apple in it, slightly wetting the edges to make them stick. Bake in shallow pans, and serve with hard sauce.

GINGER ALE.

When roots and hops cannot be readily obtained, ginger ale will form an excellent stimulating drink, and it can be made as easily in the city as the country. Procure four ounces of white ginger root, and pound or bruise it thoroughly. Mix with it three ounces of cream of tartar; then slice up very finely eight large lemons, after squeezing out all the juice. Pour over the whole five gallons of boiling water, and stir into it five pounds of sugar. Let it stand until milk warm; then put in a large slice of dry bread, and pour over it a teacupful of liquid yeast. Let it ferment for twelve hours, covering the whole with a cloth, if you intend to bottle it; but if it is made in a keg, let it ferment through the bung-hole for sixteen hours, and then close it tightly, and in two days it will be ready for use. It will foam like cream ale, while its flavor will suit the most fastidious palate. It must be kept in an ice house, or the coldest of cellars, or it will become sour; but it can be remedied by adding a tablespoonful of sugar to each glass of beer. If bottled, fill the bottles only two-thirds full, and fasten the corks with wire or twine.

RYE MINUTE PUDDING.

Heat milk to the boiling point, salt to taste, and stir in gradually rye flour to make a thick mush. Cook about fifteen minutes, and eat with sugar and cream. This we know to be good, and it recalls pleasant recollections of early home life.

TO CLEAN CISTERN WATER.

Add two ounces powdered alum and two ounces borax to a twenty-barrel cistern of rain water that is blackened or oily, and in a few hours the sediment will settle and the water be clarified and fit for washing and even for cooking purposes.

DELMONICO PUDDING.

Boil a quart of milk over a slow fire, stirring frequently, as if preparing Devonshire cream. Stir in the yolks of four eggs, beaten to a froth, four tablespoonfuls of corn starch wet with milk, five tablespoonfuls of sugar, and a pinch of salt. When the mixture thickens pour it into a tin kettle, and set in cold water or ice to prevent curdling. Beat the whites of the eggs to a froth with four tablespoonfuls of sugar, and a drop or two of vanilla; pour the pudding into a baking dish, frost with the egg and brown in the oven.

GOOSEBERRY JAM

May be made from either green or ripe gooseberries; we prefer the former. Wash the fruit, pick it over carefully, and weigh it; then place the whole or a portion of it in a stone jar, which may be set in the oven, closely covered, or in a kettle of hot water until the fruit is softened, and then boiled in a porcelain kettle for one hour. Allow three-quarters of a pound of sugar for each pound of fruit; at the end of the hour add the sugar and boil for an hour longer.

BLACK CURRANT JAM

May be made in the same manner, but will require a little less boiling. It is said to be an excellent remedy for throat diseases, and the paste is frequently used in preparing prescriptions for them.

GOOSEBERRY JELLY.

Soften the fruit as before directed, and when the juice flows freely let it drain through a bag; do not squeeze, but suspend the bag over a bowl and leave it for several hours, or over night. Allow a pound of sugar for each pint of juice. Boil the latter alone for twenty minutes; then add the sugar and boil for five minutes longer, skim carefully, or strain again, and pour it into glasses while still hot. Dip the glasses into cold water and set each one as you fill it on a cold wet cloth. You may take the further precaution of putting a silver spoon into the glass, as a heat conductor, but if the wet cloth is kept cold, this will scarcely be necessary.

CURRANT JELLY.

Take currants as soon as they are fully ripe (they are not as good for jelly if too ripe or old); look them over, and pick out all the leaves and poor currants; it is not necessary to stem them; fill a large platter, set in a slow oven, stir occasionally until scalding hot, then pour them into a large earthen dish; I always keep a large sized wash-bowl for cooking purposes. Fill the platter with fresh currants and place in the oven, and repeat until they are all scalded; crush, and squeeze out the stems; strain first through a coarse towel, then through a flannel jelly-bag, previously wrung out in hot water. Measure the juice; put it in a preserving kettle (porcelain-lined is the best), set over the fire, skim, and boil at least fifteen minutes after it begins to boil. While the juice is boiling, weigh out the sugar, allowing one pound of white sugar to each pint of juice; set in the oven to heat, and after the juice has boiled the required time, pour in the hot sugar; stir until it has all dissolved, but do not let it boil, after the sugar is in. Take from the fire, pour into glasses, and set in a cool, dry place for two days; then wet tissue paper in brandy, and lay over the tops of the glasses; then cover with thick brown paper, and paste the edges down with flour paste. Try this once and you will thank me when you eat the jelly.

COCONUT CAKE.

Take two cupfuls of flour, two and a half cupfuls of sugar, quarter of a cupful of butter, half a cupful of sweet milk or water, four eggs (leaving out the whites of two for frosting), two teaspoonfuls of cream tartar, rubbed through the flour, and one teaspoonful of soda, dissolved in a very little hot water. Measure the butter and milk very accurately, or you may need to add a trifle more

flour. Bake in three layers, having the bottom of your jelly pans previously lined with nicely-greased paper, as the cake turns out much nicer. With the two whites and sixteen tablespoonfuls of powdered sugar, make a frosting, with which spread the layers, and sprinkle on the grated cocoonut, covering the top and sides completely, and you will have a beautiful foam-like mound of cake.

SUMMER DRINKS.

Lemonade is always delicious to the palate, and exerts a cooling influence on the system, but a teaspoonful of ginger stirred into it will make it preferable for dyspeptics.

Claret is much recommended as a summer beverage, and mixed with iced water it is a pleasant drink, but not superior to either root beer or ginger ale.

Iced tea is also very refreshing to the sufferer from thirst, in the heated room, and a pot of it can be made by the fire that cooks the dinner, and set aside until tea time, when it can be poured into tumblers filled with ice cracked into small bits, and drank with or without the addition of sugar. To those who are obliged to work under the scorching sun, a tumblerful of ice-cold tea is a most acceptable offering, as it cheers without inebriating.

RE-GILDING MIRRORS, ETC.

Please give directions for re-gilding mirror or picture frames. SUBSCRIBER.

Implement for gilding are: A gilder's cushion, which is an oblong piece of wood stuffed with several thicknesses of flannel, and covered with rough calf-skin with a border of parchment, about four inches deep, at one end, to prevent the air blowing the gold leaves about when on the cushion; a gilding knife; several camel's-hair pencils of assorted sizes, and a burnisher. Turn the gold leaves out of the book, one at a time, on to the cushion, and with the gilding knife cut it into the size required; place the frame in nearly a horizontal position, and, with a long-haired camel's-hair pencil, dipped in water, go over as much of the frame as the piece of gold is to cover; take up the gold leaf with the tip of a pencil and carefully place over the wetted frame; breathe on it and it will adhere. Do not attempt to cover too much at a time, and the part of the frame to which the piece is applied must be sufficiently wet. When covered, set by to dry for ten or twelve hours; wipe the burnisher and only burnish an inch or so in length at a time, taking care not to lean too hard, but with a gentle and quick motion apply the tool until the frame is equally bright in every part.

GATHERING HOPS.

Hops should be gathered before frost; as soon as fully grown they are ready for picking; never later than the middle of September. If left later the balls will spread, and the pollen—the most essential part of the hop—will be shaken out by the wind swaying the branches. The pollen lies at the base of the leaves contained in the hop ball, and is a yellowish powder.

AN EFFERVESCENT DRINK.

Mix two ounces of tartaric acid with two pounds of granulated sugar; stir in the whites of four well-beaten eggs, and dissolve in two quarts of cold water. Add to it a one-ounce bottle of essence of ginger. Bottle it tightly, and when desired for use, put a tablespoonful of it to four tablespoonfuls of iced water, and stir in a small half teaspoonful of saleratus.

A Connecticut lover, young and enthusiastic, who sang and played for nearly two hours before the house of his lady love the other evening, was electrified—that is, shocked—after a short pause, by a cordial "Thank you," gracefully pronounced by the "other fellow," who appeared at the drawing-room window.

"Will you be after tellin' us what's the time, Patrick?" asked Tim. "An' sure I'd do it, but me watch is most two days too fast!" was the prompt reply.

THE PLEASURES OF MEMORY.—Mrs. Henpeck—"How stupid that you can't recollect when Mrs. Major Shouter called!" Mr. Henpeck—"I—I know it was the day you hit me with the camp-stool." "Mrs. H.—"Then it was on Friday." Mr. H.—"No, no; that was the day you threw the teapot at me."

Thank You.

It is surprising how much a little oil of politeness lubricates the wheels of society, making the whole vast amount of intricate machinery move easily and with little friction. No matter whether at home, in business or in social intercourse with those in our service, friends and acquaintances, the result is the same—and when such good results obtain with so little expenditure of thought or labor, is it not strange that their attainment is not more often made the object of our attention? A kind look or word often makes it a pleasure to do that which, otherwise, would be a task or duty performed with the feeling of must resting heavily upon us.

A child leaves its play to obey an instruction to shut the door much more readily if spoken to in a kindly tone, and preceded or followed by "please," and the gratification we receive when we have done any little service for another is greatly increased if it be acknowledged by a simple "thank you." Perhaps we are satisfied the feeling is there, but to have it expressed is always pleasant.

Music and Drawing at Home.

A mother writes to us, "Our income is so limited that every dollar weighs full weight in the year's expenses. Under these circumstances, would you advise that our girls should be taught music and drawing? The boys have received college educations." To which we reply that the decision must depend on the individual girl. Unfortunately, the individual girl has very little to do with the course of her parents in regard to her education if she happen to live in a small inland town or farm neighborhood. Life and action in these towns are, as a rule, governed by universal custom rather than by practical personal reasons. The mysterious power called "fashion," or "style," governs not only the clothes, but the daily habits and doings of the inhabitants of a small town much more arbitrarily than those of a city. We wish we had a voice strong and penetrating enough to reach every family in such classes, and show them the folly of this herding together in small matters like a flock of unreasoning sheep. The farmer, or shop keeper, judges for himself in business matters, but he eats, dresses and lives after the fashion set by the squire; and his little daughter must go through the same training as the squire's heiress, or lose caste. "College educations," in such cases as often these are, grow at great sacrifice to the parents, not because the boy is especially fitted to receive a classical training, nor because it will better fit him to be a helpful citizen of the world, but because "it is a step upward,"—it is "more genteel." As to the effect of the collegiate training we have nothing to say; we only quarrel with the motive of giving it. Precisely the same motives apply to a girl's so-called accomplishments. In countless towns the acquisition of the proper rank in gentility involves the necessity of "piano lessons" for the girls. The instrument is bought after much saving and stinting in other matters. Nelly is bought; through sore tribulation, to hammer out a half dozen dashing marches or waltzes, and that is the end of it. After she marries she neither plays for her own pleasure nor for her husband's, and she is not competent to teach her own daughter. But the piano is there, a big assertant token of social rank. If any such ambition as this urges our correspondent we can only assure her that no greater outlay can be made of money or time for such small reward. If a boy or girl evince decided musical ability, or ability, indeed, of any kind, let no money, labor or time be spared in its culture. It is, perhaps, their one weapon—their one expression—the magnetic cord with which they will be brought into relation with the world. But let it be trained and encouraged just the same, whether it be genteel talent for music or drawing, or the more ignoble skill in type-setting, carving, sewing or cookery. Find what material is actually in your boy or girl and make the best of that. Don't model them after your own idea. Many a financier was berated as a stupid because he could not master Horace or Homer. Many a brilliant woman remembers a youth neglected and solitary, when she disappointed a mother because she could not rival the town belles in pretty little accomplishments. "Can you purr?" said the cat to the ugly duck. "Then of what use are you in the world?" The fact is, however, that most of the mothers are on the look-out to find swans in their ugly ducklings. Genius is not likely to be overlooked in any American household. It is the dull, ordinary boys, the matter-of-fact homely girls who need to have their education carefully guarded. If

it will please or soothe the woman in lonely or sorrowful days to thrum her little airs, or sing her little songs, all success to her and her "piano lessons." But, in Heaven's name, not a note for the sake of gentility. If she have expertness of fingers, but no imagination, shall she not be taught to draw because she can never be a Raphael? She may design posters and bill heads, and earn a comfortable meal thereby some day for her children.

Stray Thoughts.

ORIGINAL.

In my memory's picture gallery,
Bright, and fair, so fresh and new,
Stands a lovely painted picture,
Just within my longing view.

I behold, the prospect brightens,
Charmed, entranced, I stand and gaze,
And my heart thrills with emotions,
As I look upon that face.

Tender thoughts come sweeping o'er me,
Joys before my vision rise;
Sweetest bliss, when once experienced,
From my memory never dies.

Like the music of the waters,
Like the sound of silver bell,
Like the whispering of the night winds,
Like the murmuring of a shell.

Like the voice of angels, speaking
Words of peace, to all below;
Like the spring-time's glistening rain-drops,
Like the dew or dazzling snow.

Like the sweetness of the rose-bud,
Like a lily pure and fair,
Like the modest little violet,
Like a tulip, rich and rare.

All the graces are united
In the picture in my mind;
All the purity and brightness,
In my picture you may find.

Happy happy thoughts it wakens,
Thoughts of sweet and peaceful days;
But relentless memory whispers
Love is dead and youth decays.

Slowly then the shadow gathers,
Dimly now my picture's seen,
Glistening falls the bitter tear-drop,
Where the beauty once had been.

Sadly now my thoughts are wandering,
O'er the future and the past,
And I often vaguely wonder,
If all will be right at last.

Yes, I feel all things are working
For my good, though strange, unknown,
I'll not murmur though in sadness,
For the pure joys that have flown.

But I hope a brighter future,
Soon may dawn upon my soul;
So in my picture light and shadow
United, make a perfect whole.
Covey Hill, July 23, 1878. H. E. C.

Sun-Song.

BY E. B. ROBINSON.

What makes the birds so merry?
What makes so ripe the cherry?
It is the sun that comes along
To mellow fruit and mellow song:
This makes the birds so merry,
This makes so ripe the cherry.

What warms the blood that rushes
To bring the tint that blushes?
It is the Sun imparting heat
To rosy lips to make them sweet;
This warms the blood that rushes
To bring the tint that blushes.

Why are the flowers growing,
With odors overflowing?
Because the Sun each blossom loves
More than the honey-bee that roves;
For this the flowers are growing,
With odors overflowing.

The Return of the Swallows.

The gorse is yellow on the heath,
The banks with speedwell flowers are gay,
The oaks are budding; and beneath
The hawthorn soon will bear the wreath,
The silver wreath of May.

The welcome guest of settled Spring,
The swallow, too, is come at last;
Just at sunset, when thrushes sing,
I saw her dash with rapid wing,
And hailed her as she passed.

Come, Summer visitant, attach
To my reed roof thy nest of clay,
And let my ear thy music catch,
Low twittering underneath the thatch,
At the gray dawn of day.

CHARLOTTE SMITH.

The Wishes.

An old farm house, with meadows wide,
And sweet with clover on each side;
A bright-eyed boy who looks from out
The door the woodbine wreathed about,
And wishes this one thought all day:
"Oh! if I could but fly away
From this dull spot the world to see,
How happy, happy, happy,
How happy I would be!"

Amid the city's constant din,
A man who round the world has been
Is thinking, thinking all day long:
"Oh! if I could only trace once more
The field-path to the farm house door,
The old green meadows could I see,
How happy, happy, happy,
How happy I would be!"

Farmer A and His Butter.

A very fine dairy has Farmer A;
He makes "gilt-edged" butter, his neighbors all
say.
Now, Farmer A thought his butter so nice
That by "holding" he'd get a much higher price.

JUNE.

"Good morning," the middleman said;
"Have you butter to sell?" Mr. A shook his
head,
"What d'ye pay?" "Thirty-five is a very fair
price."
Mr. A shook his head. "My butter's too nice."

SEPTEMBER.

"I've called 'round again to look at your butter."
This remark set the farmer's heart in a flutter.
(It's advanced, his calling shows that very plain,
I think I won't sell till it goes up again);
"What d'ye pay?" "Forty cents," the middle-
man said—
"That's a little more like it"—but he still shook
his head.

NOVEMBER.

"I want some 'gilt-edge,' some A number one,
I think to the very top notch it has gone;
Mr. A you had better take my advice—
Dispose of your butter while it brings a good
price.
Of course you're aware you may hold it too long,
The best butter sometimes becomes very strong."
"What d'ye pay?" "Forty-five," the middleman
said.
"Let 'er be up to fifty"—he still shook his head.

MARCH.

The butter is "frowy," he'll hold it no longer,
For every day it smells stronger and stronger;
Sorry that he hadn't sold when 'twas higher,
He starts off to town to hunt up a buyer.
The middleman's tryer goes down through the
stuff—
Whew! whew! how it smells—one smell is
enough;
"I don't wish to buy." "Make me one offer,
please."
"Mr. A I am paying ten cents for poor grease."

MORAL.

Now, don't hold too long just because it is nice.
Let 'em slide every time when it brings a good
price. Exchange.

Why are bakers very self-denying people? Be-
cause they sell what they knead themselves.
Why are children like jellies? As they are
moulded so will they turn out.

Uncle Tom's Department.

MY DEAR NEPHEWS AND NIECES,—Let us all take time for reading. It will never come if we wait to have every piece of work finished. We can always find something else to do. Some boys and girls do not care for reading, but will spend their time in chatting or in light amusement, and not improving themselves or cultivating their taste for mental pursuits, which is certainly a great mistake. To feel easy in social circles it is necessary that you should read and reflect, and listen and converse. What shall we read? Whatever really helps us along, whether it be history, science, philosophy or morals. I can't read hard books when I am tired. But if we live on light reading entirely we cannot expect to gain in mental strength and growth. Do you know what a joy it is to feel that though your school days are long past your intellectual growth is still going on? The lessons of our own experience are most valuable, I know, but good books are a great help. From them we get the experience and observation of others.

UNCLE TOM.

PUZZLES.

66.—I am composed of 22 letters :
My 19, 21, 22 is loud, but not boisterous;
My 13, 14, 15, 16 is ever nigh;
My 12, 11, 10 is never anything but dim;
My 17, 9, 6, 7, 8 what we don't like to give;
My 1, 2, 3, 4 is always seen;
My 17, 5, 10 is a nick name;
My whole is seen in the midnight cloud.
MAGGIE C. BURNS.

67.—ENIGMA.

I am composed of 12 letters :
My 7, 8, 9, 10 is much sought for ;
My 3, 2, 11 needs refining ;
My 4, 5, 1 is an article of dress ;
My 7, 12, 5, 6 is caused by contraction ;
My whole is what everything in the world is doing at once.
MAGGIE C. BURNS.

68.—CROSS-WORD ENIGMA.

I am in showers, not in mist ;
Mid purple flowers, not amethyst ;
With roses crowned, but not with buds ;
In thickets found, not in the woods ;
In vines I dwell, yet cannot climb ;
In song I swell, but not in rhyme ;
After solving you may crow.
If you find my whole, to grow
MRS. E. M. CONKLIN.

69.—CHARADE.

Of man my first is friend and foe,
It does seem strange indeed ;
It comforts him, and him destroys,
The wind will give it speed.
My second is a torment small,
But manifold of life ;
There are few plagues that equal it,
In summer it is rife.
My whole is like the Lady Moon,
Who loves the lonely night ;
A lovely mission, is it not,
To make dark places bright ?

70.—DECAPITATION.

Of my whole you have more than one, transpose me and I become a border. Behead and curtail me, I become circular again. Behead and transpose me, and I become a liquid. Behead me again and I become a proposition.
SECOND.—If you touch me, take care of my sting. Transpose me and beware of my claws. Behead me and I am more venomous still. Cut off my tail and I cease to be. MAY J. BOWMAN.

71.—NUMERICAL ENIGMA.

The whole composed of 9 letters is the name of a queen of the olden times, celebrated for her beauty:
The 1, 9, 5 is to cover;
The 7, 6, 2, 3 is a story;
The 7, 4, 5 is a boys toy;
The 8, 9, 7 is a small animal.
J. HARRY CROSS.

72.—NUMERICAL ENIGMA.

I consist of 16 letters:
My 6, 11, 9, 13 is a river in England;
My 3, 6, 11, 2, 7 is a bird of prey;
My 1, 6, 3, 8 is a market;
My 8, 2, 6 is a plant.
My 13, 14, 8, 5 is a river in Scotland;
My 14, 3, 8, 7 is a metal;
My 4, 9, 8 is a hut;
My 10, 12, 16, 8 is a part of your body;
My 15, 6, 8 is an animal;
My 7, 14, 13, 2 is a number;
My whole is one of Shakespeare's plays.
JAMES JACKSON.

73.—CROSS-WORD ENIGMA.

In latch, not in gate;
In love, not in hate;
In live, not in die;
In truth, not in lie;
In mast, not in wheel;
In rob, not in steal;
In burn, not in fire;
In string, not in lyre;
Whole did win a noble game;
Can ye puzzlers guess his name.
J. A. CROSS.

74.—REBUS.

The roof of my habitation is hushed by the gay laughing billows; had I eyes I might often gaze upon the magic pencilled archway of Heaven; I live, move and have a being, yet I can neither fly, swim nor walk, as I have neither wings, fins nor feet; you will not find me on the land; you will not fish me out of the sea; when cooked I am delicious.
MAGGIE.

75.—CHARADES.

1.—My whole is beautiful, gorgeous, grand, and caused by my first; my second has made freedom to loudly re-echo victory on the mountain, in the valley and down the glen.
2.—My whole were once caverns for sweets; my second is made by my first.
MAGGIE C. BURNS.

PECULIAR PUZZLE.

The centre word (of three letters) reads the same both ways. The downward word of the whole is a token of remembrance; the cross word signifies exceedingly large. The inside letter of the two to the right, with the inside letter of the lower two, the inside letter of the upper two, and the inside letter of the left hand two, makes a word which forms part of a flower. And the same word is formed if, instead of the upper inside letter and left hand letter the two upper or the two left hand letters of the centre word are used.
PECULIAR DIAMOND.

The whole word, composed of seven letters, is formed of two small words united by one letter in the centre; which small words also form a small diamond on each point of the large one.

1. A consonant. 2. A female. 3. Money gone. 4. To ease for protection (a verb). 5. A French word for coming in. 6. A definite article. 7. A consonant.

A VERY LITTLE STORY IN A PUZZLE.

I stand in the midst of two little girls; one of which opposes all her mother's efforts for her good, while the other does everything in her power to help. (The first down, the other across.) The puzzle is formed of two words of seven letters each, crossing each other thus:—

The centre word (of three letters) the same down and across.

Answers to July Puzzles.

No. 55—Saint Louis. 56—Luncheon. 57—A cigar.
58.—1, Sunday; 2, Chairman; 3, Voyage; 4, Kindness.
59—O, there are looks and tones that dart
An instant sunshine to the heart,
As if the soul that moment caught
Some treasure it through life had sought.
61.—1, Parsonage—arson, page. 2, Noticeable—ice, notable.
3, Bewilder—wild, beer. 4, Devotee—vote, dec.
62.—A contented mind is of more value than the treasures of India.
63.—Unquestionably.
64.—Good intentions will not atone for sinful actions.
65.—He doeth much good who doeth well what he hath to do.
66.—Fashion.

Names of Those Who Sent Correct Answers to July Puzzles.

James H. Cross, Mary J. Bowman, Margaret Annie Blair, Mrs. M. A. Hopworth, Mary A. Andrews, Edith H. Cutten, Andrew Chisholm, Alice Payne, Hannah Jell, Amelia Chambers, Frank Plumber, Alice Mason, Nessie E. Stevens, M. W. Collet, B. P. Emery, Carrie Willis, Bertie Pierson, Emma A. Gil, Willie Sheffield, Lewis Lockwood, Walter Sanger, George Mitchell, Mary Worthington, John Scott, Mary Bailey, Votarus Grafton, Amos Hawkins, Effie Jackson.
We are happy to congratulate Edith H. Cutten upon her success in answering the greatest number of puzzles.

HUMOROUS.

A young and pretty girl stepped into a shop where a spruce young man, who had long been enamored but dared not speak, stood behind the counter selling drapery. In order to remain as long as possible she cheapened everything, and at last she said, "I believe you think I am cheating you." "Oh, no," said the youngster; "to me you are always fair." "Well," whispered the lady, blushing, as she laid an emphasis on the word, "I would not stay so long bargaining if you were not so dear."

College Professor (to Junior who has been taking advantage of his absent-mindedness): "Young man, I find on looking over the records that this makes the fifth time in two years that you have been granted leave of absence to attend your grand-mother's funeral."

A little boy, hearing some one remark that nothing was quicker than thought, said: "I know something that is quicker than thought." "What is it Johnny?" asked his pa. "Whistling," said Johnny. "When I was in school yesterday, I whistled before I thought; and got licked for it too."

A couple of young men were out fishing the other day, and on returning, were going past a farmhouse and felt hungry. They yelled to the farmer's daughters: "Girls, have you any butter-milk?" The reply was gently wafted back to their ears: "Yes; but we keep it for our own calves." The boys calculated that they had business away—and they went.

An old Scotch lady had an evening party where a young man was present who was about to leave for an appointment in China. He was exceedingly extravagant in his conversation about himself, the old lady said when he was leaving. "Tak guid care o' yoursel, my man, when ye're awa; for, mind ye, they eat puppies in Cheena?"

ONE VIEW OF THE CASE.—Master: You say Alfred the Great was a very excellent king and did much good for his subjects; now give me an instance of his good deeds.—Small Boy (just recovered from a bilious attack and the paternal wrath): Please, sir, he burnt some nasty, unwholesome cakes that would have made the shepherd ill.

A Danbury woman of somewhat generous pedal extremities, having spoken disparagingly of another woman's fondness for a pet dog, and declared that she would not have such a thing about her, the other woman unkindly explained that the size of her feet prevented her from keeping a pet dog, unless the animal was slung in a hammock.

"John," said a poverty-stricken man to his son, "I've made my will to-day." "Ah!" replied John, "you were liberal to me no doubt." "Yes, John, I came down handsome. I've willed you the whole country to make a living in, with the privilege of going elsewhere if you can do better."

At a popular store famous for the prompt and polite attention of the clerks, a woman of perhaps thirty years was looking at the goods, when a young man stepped toward her, and asked, "Is anyone waiting upon you?" "Why, what a question! I've been married this ten years."

What is a Team.

The Court of Queen's Bench was recently called upon to give a legal definition to the word "team." A tenant of an English duke had agreed, as a part of his rent payment, to furnish at sundry times "one day's team work with two horses and one proper person."

On one occasion the duke's manager desired the farmer to send a cart to fetch coals from a railway station to the ducal mansion. The farmer offered to furnish two horses and a man, but insisted that the duke should supply the cart. "There can't be a 'team' without a cart or wagon," said the manager.

"Oh, yes, there can!" replied the farmer; the horses are the team."

Both parties were honest, and both were obstinate, and so the law was asked to decide which definition of a "team" was correct, the duke's or the farmer's. A jury said the duke's, but the farmer asked the Court of Queen's Bench if the jury were not quite incorrect as was the duke.

The court heard learned lawyers argue, and also discussed among themselves, What is a team? Poetry and lexicons were appealed to. One judge quoted these lines to show that the team is separate from the cart:

"Giles Jelt was sleeping, in his cart he lay,
Some waggish pilferers stole his team away.
Giles wakes and cries, "Ods bodkins, what is here?
Why, how now; am I Giles or not?
If he, I've lost six geldings to my smart;
If not, Ods bodkins, I've found a cart!"

Another judge quoted a line from Wordsworth:

"My jolly team will work alone for me."
Horses, said the learned judge, might be "jolly," but a cart cannot. Whereupon the counsel for the duke gave the judge "a Rowland" for his "Oliver" by citing Gray's lines:

"Oft did the harvest to their sickle yield,
Their furrow oft the stubborn glebe hath broke;
How jocund did they drive their team afield,
How bow'd the wood beneath their sturdy stroke!"

But the farmer's lawyer "capped" that quotation with several citations from the poets. From Spenser:

"Thee a plowman all unmeeting found,
As he his toilsome team that way did guide,
And brought thee up a plowman's state to bide."

From Shakespeare:

"We fairies that do run,
By the tripple Hecate's team,
From the presence of the sun,
Following darkness like a dream."

From Dryden:

"Any number, and passing in a line,
Like a long team of snowy swans on high,
Which clap their wings and cleave the liquid sky."

The judges decided two to one that the farmers' definition of "team" was correct; and then as if to add another to the many illustrations of the "glorious uncertainty of the law," said they would hear the case over again.

The case shows the importance of putting down in a written agreement just what is agreed upon, and of eschewing all ambiguous words.

The Storks—A Scene in the Lowlands of Holland.

Storks are as familiar to the people of Holland as the robins are to my young friends, the readers of the *Advocate*. I dare say some of you have read of the great affection of the storks for their young ones, and the equally great affection of the young storks for their parents. One instance of this has been often told. A stork, it is said, had grown very old and feeble, and was no longer able to procure its own food from the fens where they are accustomed to procure small fish and creeping animals for their food. This old stork was seen sitting on the bank of a canal, partly bare of feathers from her great age. Two younger storks—her own children—were with her, one on each side, feeding her with their long bills, putting into her bill the food they had brought from beneath the stagnant waters of the fens.

Storks are never disturbed in Holland by any one; even little boys walk past them without annoying them. One of the laws of Holland forbids

the killing of a stork or even the robbing of a stork's nest, under a heavy penalty. Holland is a very low, flat country, and many of the buildings have their foundations on piles sunk in the soft, wet earth. In this marshy earth, or mud, great numbers of small living creatures breed and live. They bore into the sunken piles and eat away so much of them that, if there were no check to their ravages, they would destroy the piles and cause the buildings that are built resting on them to tumble into ruins. Storks are the great friends of man in contending with these wood-eaters. They go through the fens and wade on their long legs through the sluggish waters, and with their bills search for these insects, destroying vast numbers of them. On this account they are protected by the laws of the kingdom. The people also like them for the great affection they have for one another. Our Canadian birds do us great good by destroying the insects that are robbing our gardens and orchards of their fruit, and so they are called our feathered friends. I hope you will protect them from being stoned or shot, and save their nests from being robbed.

The Backbiter.

There's some one living in this town
(Maybe you know her name,
And maybe, should I write it down,
Your own might prove the same),
Who, when you say "He's good," will cry
"Indeed! You think that's true,
But," very confidentially,
"You wouldn't—if you knew!"

One says, "What pretty girl goes by!"
"Oh, horrors! you don't think
So!—Since we're you and I,



STORKS IN HOLLAND.

I'll say her parents drink.
And she—well, I won't tell it out,
Though I've no doubt 'tis true.
You think she's nice and pretty, but
You wouldn't—if you knew!"

If one sings sweetly, "How she flats!"
If dressed in taste, "What style!"
Supremely "vulgar" all her hats,
Her dresses simply "vile."
And when good Deacon Busby failed
(A noble man and true),
She said, when he his lot bewailed,
"You wouldn't—if you knew!"

Let those admire and love who can
This malice-breathing dame,
Who seems to think a prosperous man
Must surely be to blame;
That beauty is a mask of sin,
That goodness must be crime;
She sees but thieves and rascals in
The heroes of the time.

Sometimes she doesn't hesitate
To tell us what she knows,
And in nine cases out of eight
A lie is all she shows.
For virtue's sake, I hope to find
One good old doctrine true.
Some heat for such I should not mind,
You wouldn't—if you knew."

"Whisky is your greatest enemy," said a minister to Deacon Jones. "But," said Jones, "don't the Bible say, Mr. Preacher, that we are to love our enemies?" "Oh, yes, Deacon Jones; but it don't say we are to swallow them."

How She Gave the Census.

When the census taker rapped at the door of a certain Detroit cottage on Crawford street, the other day, and wondered if the woman would set the dog on him or douse him with dish-water, a great disappointment awaited him. She opened the door softly, sniffed the air to see if he smelled of lightning rods, and then threw it open for him to enter.

"Madam, I am making a canvass of the city," he began.

"Ah! sit down," she replied, and as he began opening his book she continued—"There are five of us in the family, and we paid \$100 down on this place. My husband's name is Peter, his age is forty-two, and he came from a mean family. His father was always having lawsuits about dogs, and his mother was the greatest gossip in Elmira. Have you got that down?"

"My name is Alvina Sarah, and I was born in—"

"I don't care to know where you were born, madam," he interrupted.

"Well, I care!" she exclaimed; "it makes a great deal of difference whether I was born in Africa or Boston, and I want it put down. As I was saying, I was born in Boston in 1838. Put down that I came of a good family."

"Madam, you don't understand—you—"

"Don't I understand that I came of a good family? I'd like to know of a Boston family which carried their noses higher than the Rogerses! Put down that my father was in the Mexican war."

"You have three children, madam?"

"I haven't any such thing, sir!" Put down that my mother was killed by an explosion in a quarry. Her mother and father were—"

"How many children have you, madam?"

"Have you got mother down?"

"No, madam. You see, I am taking the census of the city."

"Well," she said, giving him a dangerous look, "I had the typhoid fever at the age of fifteen, and for weeks and weeks I hung on the edge of the grave. I bore up as well as I was able, and—"

"Five in the family—how many children?" he inquired.

"Put down that I bore up!" she commanded. "And that one night when the watchers were asleep, I crept out of bed and took a drink of—"

"This is foreign to the subject, madam. How old are your children?"

"Haven't you put down that I hung on the edge of the grave?"

"No, madam."

"Aren't you going to?"

"No, madam. You see I am simply taking the census of Detroit. I desire to ascertain—"

"You can't ascertain it here, sir!" she snapped.

"If my sickness, which cost over \$200, isn't good enough to go in the book, then you don't get a line here!"

"Let me ask you—"

"No use asking for any of our photographs, sir. If you get 'em anywhere and put our pictures in that book, we'll make it hot for you! Good day, sir, good day!"

He stood on the step, sighing, and she called through the door—

"My grandfather was also bitten to death by an alligator, but I won't give you any of the particulars! You want to walk."

He passed on, sorrowfully wondering if the next woman's mother was blown off a bridge or carried down the river on a haystack. —*Detroit Free Press.*

They were sitting on the piazza near the seaside. He was her lover, handsome, and full of the ardor of impassioned youth. She was sentimental and pretty, but the mosquitoes were buzzing around her so lively that even love became monotonous. Finally there was a lull in the conversation, which he broke by observing: "What are the wild waves singing?" She smiled sweetly, and swinging one of her ivory arms over her golden curls, lisped: "I think they must be singing Home, Sweet Home." He left.

SECOND THOUGHTS.—Priest: "Wilt thou have this woman to be thy wedded wife?" Bridegroom Elect: "Well, aw's warned aw'll hev to hev her. But aw wad rayther hev her sister!"

Pocket-Money for the Young People.

Did any one ever know a spirited young person who did not prefer earning his "spending-money" to having it as a gift from his elders? It is well, too, that young people should know "how the money comes" which is theirs to spend. It trains them to a habit of self-reliance. If the boy or girl who has to work patiently for the wherewithal to purchase the various little needs and pleasures so dear to the heart of youth, does not develop into a painstaking, economical man and woman, the personal experience of thousands who had to earn the pennies that went to pay for their holiday whistles, goes for nothing.

My young friend, to avoid the disagreeableness of doing something for which you have no liking, or what is worse, leaving it before it is fairly begun, turn the question "What shall I do?" over in your mind before you set to work. If you have a taste for poultry rearing and none for gardening, keep out of the garden by all means. If you have no fancy for poultry, you will most likely be on the lookout for a calf or two, or a pig or a lamb, to raise on your own account. Calves, toward which youthful eyes are often turned with longing, are killed because the milk cannot be spared for them. In such cases hay tea, with just milk enough to give it the color of coffee, has been found an excellent substitute. The tea should be made daily,—enough each time for two feeds.

In some families the eggs over and above a stated number each day, are given to the child who gathers them. This answers for the "little shavers," and if anyone thinks there will be many hens sitting around on stolen nests, let him try it and see. In the same way the surplus butter goes to "the girls" to do as they please with it, and when this is done, even young girls, provided they have been properly taught, may be safely trusted with the milk work without fear of having quantities of cream, at every skimming, left in rims around the pans, or otherwise wasted.

A pair of canary birds provided with a nest—a collar box stuffed with cotton to the proper shape, and lined with flannel, makes a good one—and given a little extra care in the way of keeping the cage supplied with food suitable for the young, may be made a source of profit. The proper food for the young birds is the yolks of a hard-boiled egg, made fine and mixed with double the quantity of bread crumbs. Nothing else, save water and, of course, seed for the old birds, should be given. Green food of all kinds must be kept away until the young ones are out of the nest, which will be in about two weeks after hatching; and by that time the mother-bird will have commenced laying again. To get the young birds out of her way, put them, as soon as they begin to peck at the contents of the feed-dish—which should be kept in the bottom of the cage—into another cage. A healthy bird, if not too old, will rear several broods before the molting season, when the nest should be taken away. A male bird often sings a *very little* when it is but three weeks old. If a bird has not been heard to sing by the time it is six or seven weeks old, you may be pretty certain it is not a singer. One thing more: do not allow the cage to be taken from its place after your bird has commenced laying, until the eggs are hatched.

Here are several ways by which boys and girls may "pick up a little money" at certain seasons: By nut-gathering, especially if you live where chestnuts abound. They do not fill the measure so fast as some other kinds, but they sell for more. By saving cherry stones, peach pits, apple seeds, etc., for the nurserymen. To get the apple seeds: take the cores after a quantity of the fruit has been pared and quartered, as for drying, put them in a barrel with water enough to float them, "churn" them for a few minutes with a churn-dasher, skim out the cores and find the seed, a quart, or less, in the bottom of the barrel.

Then for boys, there is the trapping of minks, muskrat, raccoons and other furry animals; but what farmer's son doesn't know all about that? How many a warm breakfast has been forgotten till it was no longer warm, while John, or Fred, or Tom, went whistling off to the brook where his half-dozen Oneida Communities were set? Shooting game, too, is a pastime which many boys contrive to turn to good account financially, and when the passion for hunting is not indulged in at the expense of the corn husking or apple-gathering, who shall say that the boys are injured by it?

What flies fastest when both its wings are broken? An army.

What tune makes everybody glad? Fortune.

Live for Something.

Live for something, be not idle—
Look around thee for employ;
Sit not down to useless dreaming—
Labor is the sweetest joy.
Folded hands are ever weary,
Selfish hearts are never gay;
Life for thee hath many duties—
Active be, then, while you may.

Scatter blessings in thy pathway!
Gentle words and cheering smiles
Better are than gold and silver,
With their grief-dispelling wiles.
As the pleasant sunshine falleth
Ever on the grateful earth,
So let sympathy and kindness
Gladden well the darkened hearth.

Hearts that are oppressed and weary
Drop the tear of sympathy,
Whisper words of hope and comfort,
Give, and thy reward shall be
Joy unto thy soul returning,
From this perfect fountain-head;
Freely as thou freely givest,
Shall the grateful light be shed.

As Dickens Would Have Painted It.

There is a touch of Dickens in Little Danny's soliloquy over the death of his mother. We find it in the New Orleans *Picayune*:

"I've just been down in the parlor to see mamma. She's in a long box with flowers on her. I wish she'd come and bathe my head—it aches so. Nobody ever makes it feel good but mamma. She knew how it hurt me, and she used to read to me out of a little book how my head would get well and not ache any more some day. I wish it were 'some day' now. Nobody likes me but mamma. That's 'cause I've got a sick head. Mamma used to take me in her arms and cry. When I asked what's the matter she would say, 'I'm only tired, darling.' Aunt Agnes made her tired, for when she came and stayed all day mamma would take me up in the evening on her lap and cry awful hard. I ain't had any dinner to-day. Mamma always gave me my dinner and a little twenty pudding with 'D,' for 'Danny' on the top. I like little puddings with D's on top. I like to set in my little chair by the fire and eat 'em. I wish mamma wouldn't stay in the long box. I guess Aunt Agnes put her there, 'cause she put all the flower trimmings on and shows her to everybody. There ain't any fire in the grate, but I guess I'll sit by it and make believe there is. I'll get my little dish and spoon and play I've got a pudding with D for Danny on it. But any way I want mamma so bad."

Faithful Friends.

Of all the gifts and blessings that can be meted out, there is none of more inestimable value than the possession of good friends.

All who have reached years of maturity have learned from experience the meaning of the term "summer friends." In this term there is no faithfulness included; it savors only of insincerity. In days of prosperity how many flock around us, eager to sail as we sail—to cast their lot in with ours; but let reverses come, and the storms of life beat around us, and one by one they drop away until the many fellow travelers who started out so merrily on the voyage with us dwindle down to a very small number.

In this hour we find our eyes opened, as it were—a curtain seems to be rolled back, and we see as we never saw before. The friends who made the loudest professions—who courted our society the most, are the soonest to leave, while those who remained in the background, but followed still, without any special notice from us, are the ones who cling closely around, and by sweet counsel and tender sympathy and delicate assistance, hold us up and keep the storm from wrecking us. In such hours faithful friends shine out with a brightness that nothing can exceed. Sincerity is one of the graces which should be instilled in children; they can be trained so as to be faithful in every relation of life—to be sincere in every profession—to be a help to others when they are weak and need help.

The most beautiful example of faithful friendship is a mother's love; no other love so patiently endures everything, and grows stronger all the while—clinging closer in proportion as the child is more wayward. And this friend is oftentimes

not appreciated until the lips have been sealed and the "silver cord broken." Faithfulness begets faithfulness. I never knew a person who was a faithful friend himself that did not have the ability to draw and hold about him the most devoted friends wherever his lot was cast. This is an age of change and upheavals and downfalls. Change seems to be breathed in at every breath, and it requires the strongest effort not to yield to the contagion, and become as fickle as the wind itself.

When we find we have faithful friends, how careful should we be not to wound them by word or deed—not to let them have an opportunity to grieve or sorrow one moment for any act of ours—to return their love "measure for measure," and be faithful through everything.

Coming Exhibitions.

The Provincial, at Toronto, 23rd to 28th Sept.
The Great Central, at Hamilton, on 1st, 2nd, 3rd and 4th October.
The Western, at London, on 1st, 2nd, 3rd and 4th October.
The Nova Scotia Provincial Exhibition, at Truro, on the 1st October.
The Manitoba Provincial, at Winnipeg, on the 9th and 10th October.
The Central Exhibition, at Guelph, Ont., on 17th, 18th, 19th, and 20th Sept.

UNITED STATES.

The Michigan State Agricultural Society show at Detroit, on 11th to 20th Sept.
The New York State Agricultural Society show, at Elmira, 9th to 13th Sept.
The Maine State Fair, at Portland, 17th to 20th Sept.
The Vermont State Fair, at St. Albans, on 10th to 12th Sept.
The Ohio State Fair, at Columbus, 9th to 13th Sept.

Ontario Agricultural College.

Following are the results of the written examinations held last month at the close of the spring term of the summer session of this institution. The names follow in order of merit.

SECOND YEAR.

AGRICULTURE.—First-class honors: Nicol, A., Fyfe, A.; second-class honors: White, G., Clark, J.
HORTICULTURE.—First-class honors: Nicol, A., Hartshorne, L., Torrance, F., Toole, L., Fyfe, A.; second-class honors: Carey, E. W., Clark, J., White, G.
ECONOMIC BOTANY.—Second-class honors: Stewart, W.
ENTOMOLOGY.—Second-class honors: Nicol, A., Hartshorne, L., Torrance, F.
ANALYTICAL CHEMISTRY.—First-class honors: Stewart, W., Warren, J. B.
VETERINARY MATERIA MEDICA AND THERAPEUTICS.—First-class honors: Torrance, Nicol, Hartshorne; second-class honors: Stewart, Carey, E. W.

FIRST YEAR.

AGRICULTURE.—First-class honors: Cornell, A. C., Randall, J. R., Bonnard, E., Barclay, J., Lawson, B. A., Jopling, W.; second-class honors: Dawes, M. A., Moore, M., Jenkins, L. L., Luton, A., Ash, W. E., Brecken, J., Clinton, N. J.
HORTICULTURE.—First-class honors: Bonnard, Summers, Wilkinson, Lawson, Moore, Clinton, Robinson, Jopling, Barclay, Luton; second-class honors: Ferguson, Randall, Cornell, Higgins, Gillespie, Daves, Joyce.
PHYSICAL GEOGRAPHY AND GEOLOGY.—First-class honors: Bonnard, Lawson, Randall, Luton, Cornell, Daves, Barclay, Clinton, Higgins; second-class honors: Wilkinson, Gillespie, Robinson, Bell, T., Chapman, Warren.
STRUCTURAL AND PHYSIOLOGICAL BOTANY.—First-class honors: Bonnard, Cornell, Lawson, Wilkinson, Robinson, Jopling, Moore, Barclay, Clinton, Luton; second-class honors: Higgins, Randall, Simmers, Hay, Chapman, Joyce, Grey, Doves, Gillespie.
VETERINARY MATERIA MEDICA.—First-class honors: Lawson, Moore, Randall, Jopling; second-class honors: Bell, T., Gillespie, Cann, Presgrave, Clinton, Dawes, Elliott, Wilkinson, Jenkins, Luton.

HEARING RESTORED.—Great invention by one who was deaf for 20 years. Send stamp for particulars Verry & Harper, Lock Box 80, Madison, Ind. dg-2

Commercial.

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

The almost, if not quite, tropical heat that the country has lately experienced has had the effect of hastening forward the growing crops to maturity too soon. Dairy products have also suffered, and much of both cheese and butter is more or less out of condition.

WHEAT.—The strain upon farmers in taking care of this portion of their harvest has been great. What with excessive heat, heavy straw and badly lodged, the operation on heavy clay land has been a tedious one. From what we can learn we do not think that the sample has been seriously affected by the heat, although some portions of late field are somewhat shrunken. Yet had the weather continued cool for a week or ten days longer the berry would have been much larger. From the information at our command, and this is borne out by others, we are of the opinion that there is at least one-third more acreage of fall and spring wheat to harvest over last year. Some calculators set the increase down at 144,000 acres in Ontario. This calculation is founded on the estimate that the decrease in the acreage of barley being made up in winter and spring wheat. But in our opinion this is not enough. The yield per acre will be quite equal if not better than last year.

The United States set their increase in acreage at 2,500,000 acres of winter wheat and 2,000,000 acres of spring. This, with an abundant yield, will give us an enormous quantity of wheat for export, which must find its way to the seaboard, and thence to the various European markets. What prices we are likely to realize is hard to foresee. However, one thing is certain that with an average European harvest we must see low prices, and may expect to see current rates considerably reduced before there is much movement in the new crop. Business in this article is at a standstill, and we do not look for much till farmers are well through with their harvest.

BUTTER.—About all we can report is nothing doing and stocks accumulating. We fear the heat has put a good deal of that now held throughout the country out of condition.

CHEESE.—Keeps steady and quiet although not much doing the past two weeks. The heated term has had a serious effect on some factories, in fact it will be hard to find a really fine article in the first half of July. We presume that two-thirds of the cheese-makers in the country never experienced such weather, yet whoever was in the business in 1868 will have distinct recollections of a similar July.

The copious rains which we have had the past few days will very materially help the growing crops, especially corn and roots. Even the oat crop was suffering for want of rain, and would have been almost worthless in some sections.

MONTREAL MARKETS.

Montreal, Aug. 1, 1878.

Flour—Receipts, 2,900 barrels; sales reported, 3,000 barrels; market quiet and business limited to present wants. The quotations are—Superior, \$5.10 to \$5.55; extra, \$4.95 to \$5.00; fancy, \$4.85 to \$4.90; spring extras, \$4.85 to \$5.05; superfine, \$4.60 to \$4.70; strong bakers, \$5 to \$5.25; Ontario bags, \$2.25 to \$2.30; city bags, \$2.45 to \$2.45.

CHICAGO MARKETS.

Wheat, 96c; corn, 38c. Receipts—flour, 7,350 bbls; wheat, 73,000 bush.; corn, 375,000 bush.; oats, 62,000 bush.; rye, 2,000 bush.; barley, 39,000 bush.

TORONTO MARKETS.

Toronto, Aug. 1, 1878.

Barley, 65c to 75c; Spring Wheat, 95c to \$1.00; Red Winter, 95c to 97c; Treadwell, 95c to 98c; Deihl, 97 to \$1.00; Oats, 31c to 33c; Peas, 62c to 63c; Wool, 24c to 25c; Flour, \$4.40 to \$4.65; Butter, 10c to 15c.

LONDON MARKET.

London, Aug. 1, 1878.

Deihl wheat per 100 lbs., \$1.62; treadwell, \$1.07; red, \$1.60 spring, \$1.00 to \$1.50; spring generally, \$1.40; barley, 90 to \$1.00; peas, 85c to 95c; corn, 85c to 95c; beef per qr., \$5.00 to \$7.00; lamb per lb., 8c to 12c; mutton, 6c to 7c; dressed hogs, \$4.00 to \$5.00 per 100 lbs.; live weight, \$3.50 to \$4; roll butter, 18c to 20c; tub do., 10c to 11c; eggs, fresh, 14c to 15c; packed, 10c; potatoes, 75c to \$1; turnips, 25c; carrots, 25c to 30c; lard per lb., 10c; wool 25c to 26c; cheese 11c to 12c; hay, new, per ton, \$8.00 to \$10.00; straw, per load, \$2 to \$4.50; cordwood, \$3.50 to \$4.00; flour, \$2.50 to \$3.25; cornmeal, \$3.00; fresh oatmeal, \$3.00; oats, 9c to 95c.

Oleomargarine Butter.

When several years ago Paraff created an excitement here on the oleomargarine butter question, and the subject of the patents of various parties was under discussion we made a very thorough investigation of the entire matter and predicted exactly what had since come to pass, that this new product would, in spite of the opposition of the dairy interest, gain a position among food products and that dairymen must expect to meet it. The difficulty at first, and one that we combated from the start, was that the manufacturers of it, insisted on selling it simply as butter without reference to the mode of manufacture. We insisted then as we have all along that it should be marketed on its merits. It is true that at first, under the imperfect methods of the early manufacturers in this country, it did not compare favorably with the dairy product, but the article produced now, under the Moge-Mouriez patents ranks above three-fourths of all the dairy butter brought to this market and but little under the finer grades of choice butter, and the manufacturers of it should have no hesitation, if indeed they do, in offering it on the market for what it is. It is useless for dairymen to fight this product except in one way, and that by making a better article at a low price. The process of manufacturing it is as little objectionable as those by which dozens of other food products are made. Indeed, we have visited several of the manufactories and invariably found them scrupulously neat and clean, and to reach the result attained such cleanliness is absolutely necessary. We do not pretend to say that objectionable material might not be tried to be used, but the product be certain to show it. If pure oleo-margarine oil is only used, with fresh milk, in clean vessels and with proper salt, in proper proportions and according to directions, the result must be an unobjectionable product so far as the quality of the materials is concerned. We have no interest, either remotely or contingently in this product, but we are confident that it will maintain a position in the market which will always have a wide influence on the price of the regular dairy product, and it cannot be thrown out of it by any appeals to science or prejudice. The only thing that we insist on about is that it shall be properly made and then sold for what it is.—*The Grocer.*

NEW FLOUR.—Messrs. Plewes & Peer, millers of London, Ont, shipped a carload of new flour from this city, July 21. The grain was grown on the farm of Mr. Lewis, Westminster. Who can beat this?

We have often urged the importance of establishing creameries in the different localities where there are large grazing districts. The Teeswater establishment now affords a good illustration of the advantage of these concerns. No less than twenty-two cents has been refused in this hot weather for the butter it now has on hand. Last year the Company realized 25 cents for their product. Now, it is difficult to obtain more than half this sum for country store packed, simply for the reason that it is badly mixed, and often badly cared for afterward.

Special Notices.

The attention of tree-dealers, planters, etc., is called to the advertisement of E. Moody & Sons, Lockport, N. Y. This house is one of the oldest and largest in the nursery trade in the United States.

Any one desirous of subscribing to the FARMER'S ADVOCATE, and sending \$1.50 to this office at once, will receive the back numbers from May and have their subscription paid to December, 1879. Twenty months for \$1.50. Send at once, as there are only a few back copies on hand.

Good, live agents, with some experience, are wanted to canvass Ontario and other Provinces of the Dominion for the FARMER'S ADVOCATE AND HOME MAGAZINE. Send qualifications and references at once to this office. Good commission allowed, and every possible advantage to first-class canvassers. No others need apply.

The Grangers.

A GRAND PICNIC TO BE HELD ON SEPT. 11th.

At a very large meeting of Grangers, held at the Dominion Hotel, Hamilton, it was determined to hold the annual picnic at Oaklands, on the 11th of September. Grand excursions of the brethren will take place from Niagara, Brantford and from the eastern townships. By direct invitation Mr. Leopold Bauer, of Oaklands, was present at the meeting and direct and conclusive arrangements were made. This picnic promises to be the largest ever held in Canada, and the grangers all over the country look forward eagerly to the event.

New Advertisements.

PROVINCIAL EXHIBITION.

OF THE AGRICULTURAL AND ARTS ASSOCIATION OF ONTARIO,

TO BE HELD AT TORONTO, ON THE 23rd to 28th September, 1878.

\$18,000 OFFERED IN PREMIUMS.

Entries must be made with the Secretary at Toronto on or before the undermentioned dates, viz:—

Horses, Cattle, Sheep, Swine, Poultry, Agricultural Implements, on or before Saturday, August 24th.

Grain, Field Roots, and other Farm Products, Machinery, and Manufactures generally, on or before Saturday, August 31st.

Horticultural Products, Ladies' Work, Fine Arts, etc., on or before Saturday, September 7th.

Prize Lists and Blank Forms for making the entries upon can be obtained of the Secretaries of all Agricultural and Horticultural Societies and Mechanics' Institutes throughout the Province.

JOHN R. CRAIG,

Secretary Agricultural and Arts Association



FIRST PRIZE

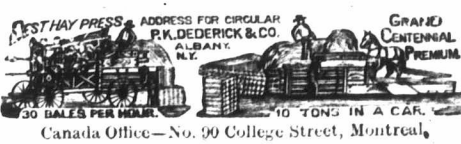
At Six Provincial Exhibitions throughout Canada: At Great Central Fair, Guelph; at Midland Counties Fair, Kingston, and at 4 Local Fairs since 1874.

The simplest, easiest operated, and most perfect Rake in the World.

No part can possibly get out of order or hinder a farmer in the field. 10000 are in use in 1878. 10000 are in use in 1878. 10000 are in use in 1878. 10000 are in use in 1878. MADE ONLY BY C. M. COSSITT & BROS., Brockville, Ont.

ALSO MANUFACTURERS FOR 12 YEARS OF BUCKEYE MOWERS AND SELF-RAKING REAPERS, Threshing and Single Machines.

Send for Circulars. Correspondence solicited from Agents and Wholesale Traders, in any part of the world.



Canada Office—No. 90 College Street, Montreal.

**Globe Lightning Rod Company,
London, Ontario.**

J. F. MAHON..... President.
C. B. HUNT..... Vice-President.
T. H. SMALLMAN..... Sec. and Treas.

Since buildings cannot be protected in any other way against lightning except by Good Conductors or Rods, and since the business of erecting lightning rods has been heretofore carried on by a class of wandering pedlars, known as "Lightning Rod Men," whose nefarious practices throughout the country have brought this laudable industry almost into disgrace, and well nigh shaken the confidence of the public in the utility of lightning rods, this company has been incorporated with a large capital, and established works at the city of London, to manufacture and erect lightning rods in a skillful and workmanlike manner.

The rods of this Company are made from pure copper, which has been proven by actual experiment to be the best conductor of lightning.

The office of a lightning rod is not to attract lightning, but to conduct it safely into the earth, as an eave trough conducts water from the roof of a building.

Every rod is erected under the supervision of experienced mechanics, and a guarantee given to each purchaser, that the rods will protect buildings against destruction by lightning; failing to do so, the money will be refunded with interest thereon, at any time within ten years.

The works of this Company being permanently located, and the officers and stockholders being men of well known integrity and business ability, are guarantees to the public that all orders entrusted to the company will be faithfully and satisfactorily executed, and that the conductors will fulfil the purposes for which they are constructed.

Full opportunity is now afforded the people to protect their homes against the ravages of lightning, and rest firmly assured that no swindling will occur.

Samples of rods can be seen at the Company's City Office, 424 Richmond St., or at the Works, King St., London, Ont.

This Company pays special attention to erecting Conductors on School Houses, Churches, Halls and other Public Buildings.

Orders solicited.

T. C. HEWITT,

Manager.

**Bishop Strachan School
FOR YOUNG LADIES.**

President, Lord Bishop of Toronto.

THIS SCHOOL OFFERS A LIBERAL EDUCATION at a rate sufficient only to cover the necessary expenditure, the best teaching being secured in every department.

The Scholastic year is divided into four terms of ten weeks each. Trinity term begins April 22.

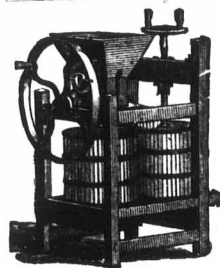
Fees per term, \$6.00 to \$18.00. Additional for boarders \$45.00.

Apply for admission or information to
MISS GRIER, Lady Principal.
dd-1f Wykeham Hall, College Avenue, Toronto

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Modelled from the Newest Designs; which, for Elegance, Durability and Workmanship, cannot be surpassed in the Dominion. dc-12



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**THE CELEBRATED HALL
"CHAMPION"**

Threshing Machine!

Improved for 1878.

Driven by Horse or Steam Power

OVER 3,000 IN USE IN CANADA.

We are now prepared to deliver on receipt of satisfactory orders our CELEBRATED HALL CHAMPION THRESHING MACHINE, to be driven by Horse or Steam Power. These machines have been without a rival for the past FIFTY YEARS, nearly all the other Threshing Machines are imitations of the Hall Machines, and have failed to give entire satisfaction. The Hall Machine has been the

Standard Threshing Machine

In the United States and Canada ever since introduced by the late JOSEPH HALL in 1823. The Hall Champion Threshing Machine has been gradually and carefully improved each year as experience proved wise and desirable. No changes have been hastily made and called improvements. The greatest possible care has been exercised in the construction of all the working parts of the machine so as to save the necessity of repair and prevent annoying delays which are caused by breakages. Nothing but the very best material has been used throughout the machine, and the workmanship is unsurpassed. Our machines are supplied with our

PATENT DIAMOND POINTED CYLINDER TEETH

worth three times as much as the ordinary teeth. We can supply

Pitts, Planet, Pelton, or Hall Horse Powers,

(eight or ten horse) either DOWN or MOUNTED on TRUCKS as customers may desire. Also TRUCKS built specially for SEPARATORS, with Broad Tires.

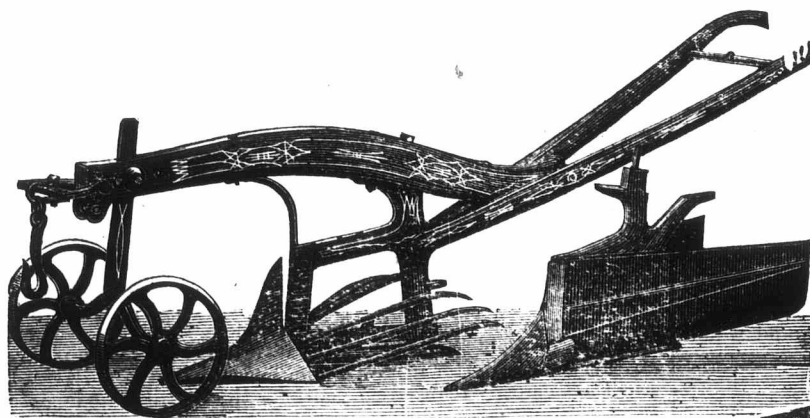
We are building a special machine for STEAM THRESHING—with 36 inch cylinder and 42 inch grain belt, and we also supply a Steam Engine which we guarantee to drive our Thresher in a first-class manner as rapidly as it can possibly be fed. Our Engine is made from the most improved model used throughout the United States, and gives universal satisfaction. It is simple in construction, easily and perfectly governed, and not liable to accidents or to get out of order, and all danger from sparks entirely removed.

Circulars sent free upon application. For further information address,

Joseph Hall Manufacturing Co.,

OSHAWA, ONTARIO.

DENNIS'S PATENT POTATO DIGGER:



THE BEST POTATO DIGGER IN THE WORLD—It will Dig 4 (Four) Acres of Potatoes Clean in one day.

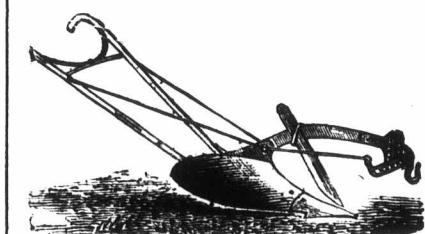
A Mould-Board Attachment may accompany the Digger, so as to make it, also, the best double-furrow plow. This is the Digger that gained

The Centennial Medal and Diploma.

It has been well tested, and will surpass any other Potato Digger for cheapness and efficiency of work.
Price of Digger, - \$18. Digger, Mould Boards and Marker, - \$25
County and Township rights for sale.

ROWLAND DENNIS, Patentee and Manufacturer.
London, Ontario

**The "Little Hero"
One-Horse Plough,**



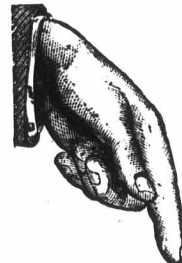
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Hot weather! Remarkably Long Straw. Large breadth sown and Heavy Yield. All demand that the Old-Style Horse-Power Thresher be "laid on the shelf."

**The Fire-Proof Champion's
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55 SOLD THIS YEAR UP TO JULY 23rd. 55



Don't
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The Fire-Proof Champion is the ONLY Engine licensed by Insurance Co's. ONLY Engine with an absolutely safe Spark-Arrester and Extended Furnace Front. ONLY Engine using the most perfect Governor in the world.

ONLY Engine that dare test its Spark-Arrester by running at hard work after dark, using all kinds of fuel.

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