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The Field.

Threshing and Selling Wheat.

These topics, as a little reflection will suffice to convince any one competent to form an opinion, are closely connected, and may therefore very properly be discussed together.

It is essential to the highest success in any line of business, that the party carrying it on shall not only do his work in the best manner, but at the best time. "To everything there is a season, and a time to every purpose under the heaven." This is especially true in regard to farming. Certain operations must be performed in their season, or they cannot be performed at all. There are others that can be attended to at various times, and yet there is a best time for them, which it is well to ascertain and improve. Threshing and selling wheat are of this latter class of operations.

The prairie farmer, careless of small gains or losses, and contemptuous of all calculating economics, drives his "header" with attendant waggons through his extensive wheat fields, and threshes, as he cuts, the deadripe grain, disposing of the straw at his leisure, by either burning it where it stands or ploughing it under. It is needless to say that this method is prolific of waste. A costlier style of farming, with the higher value of grain imparted by a thousand miles of greater proximity to market, necessitates more economical and painstaking methods. We carefully cut our wheat, with all the straw we can secure, at the precise moment when the greatest gain and the least loss attend the operation, and either house or stack it to await the process of threshing. Whether to do this promptly, or defer the job until winter, is a question that demands all the wisdom that can be brought to bear upon it.

Of course, if wheat is to be rushed into market quickly, it must be threshed at once. The necessities of some farmers leave them no option in the matter. They have run store bills, or contracted other debts, promising to pay "after harvest," and though that is an indefinite date, it is implied and dictated by honor that the thing be done as promptly as possible. Self-interest urges this. A crop of wheat, whether housed or stacked, is exposed to risks. Lightning or fire may consume it, and if a farmer's independence of debt depends on its being turned into money, the sooner it is done the better. A thoroughly independent and "fore-handed" man, who owes nobody, can calculate chances and run risks, which are foolish if not criminal in the case of one who is pressed with matured or maturing obligations, which, uncancelled, leave him ruined or crippled. Besides this, creditors grow impatient when harvest is over, however lenient they may have been before. A trifle more or less per bushel

on a crop of wheat is nothing compared with the proud satisfaction of paying a debt in good time, and being one's own man and master.

We are inclined to think that in any and every case it is well to get threshing over and done with as soon as it can well be accomplished. There is a little period of comparative slackness just after the small grains are harvested, which can be improved for this purpose. The days are longer, the weather is less likely to be unsettled, the straw is improved by thorough aeration soon after harvest, and the grain can be kept with less waste in the bin than it can in the mow or stack. Granaries can be made mice and rat-proof, but mows and stacks cannot, and in view of the serious loss often occasioned by the depredations of vermin, it is well to guard against exposure, so far as it can be done. It is another argument for early threshing, even when pecuniary necessity does not compel it, that by taking this course the grain is always ready to market, and advantage can be taken at any time of a rise in price. There are occasions when, from various causes, the price of wheat suddenly advances, and it is well to be prepared to take the top figure when it is offered.

Farmers who are not pressed to sell, and who are naturally anxious to get "the best price going," are often perplexed as to when it is wisest to carry their wheat to market. As a guide in deciding this point, it may be well to state, that men of the largest experience and ripest judgment are pretty unanimous in advising an early sale as a general rule. There are enough disinterested channels of information through which pretty accurate crop reports can be had. Speculators have a habit of exaggerating the quantity of old wheat on hand, and getting up incredible stories of the magnitude of the new crop, no matter what the actual facts may be—just as too many farmers have a habit of grumbling every spring, and predicting the reverse, no matter what the season at the truth will out. There is very little chance for speculators now, except in "corners" which are on turned and cannot long affect the market. The electric telegraph has done much to check wheat prices, and to equalize things as respects the market. Most buyers are pretty well posted in regard to the stores of old wheat and flour, and a true condition of crops all over the world. Of course there will be liability to mistaken estimates always, inasmuch as "to err is human;" but there are so many calculators and such ample means of information, that any great mistake will be exceptional. Very few make money out of sudden rises in the wheat market. Such occurrences create a feverish state of things, in the midst of which men dream of higher and yet higher prices, and often miss the tide that leads to fortune, so as to be compelled to sail on the receding wave that leads to loss.

How many hold on for the top price and are compelled at last to take the bottom price. It is the average market that is healthful and safe both for

the individual farmer and for the community at large. When a figure can be got that will pay expenses and yield a fair margin of profit, it is ordinarily a good rule, both for the merchant and the farmer, to sell their wares. There is one piece of advice which is pertinent in this connection, and which we give most earnestly. It is this. Take a first class city daily paper, and study the commercial articles and market reports. What is the outlay of five dollars a year compared with the independence of opinion and judgment which may be secured by the information thus obtained? There is not only the wheat market to be watched and studied, but the wool, butter, live stock, grass and clover seed markets. We know an intelligent farmer who has taken such a daily as above recommended for a number of years, and now he would as soon think of carrying on his business without a reaping machine as he would without his daily newspaper. Besides keeping himself "posted" as to the markets, he is abreast of the times in general news and questions of the day.

To conclude in regard to the sale of the wheat crop, we commend to the thoughtful consideration of our readers the following extract from a recent article in the *American Rural Home*.—

"Perhaps we may lay it down as a general rule, that when the last year's crop has been generally a short one and the present one is abundant, the early market will be the best; but when the last one was abundant and the current one is short, the later markets will be higher. We have usually done quite as well to thresh and prepare our grain for market as soon as we conveniently could, and when prepared, to sell it, and we do not know that we can give any better advice to others."

The Management of Manure.

In no department of practical agriculture is there more need of constant wakefulness of attention and assiduous care than in that of manure-making. To keep the soil in a state of progressive improvement should be the untiring aim of the farmer. Wonderful as is the fertility of land in its virgin state, it may not only be maintained but augmented by skilful management. Yet how few farms can be found that are kept up to their natural condition. Still fewer show any advance upon it. This is all owing to failure in the manufacture and application of manure. On this subject, above all others, it is needful to give "line upon line and precept upon precept." We make no apology, therefore, for frequent recurrence to this matter. The condition of our agriculture demands it, and we are glad to observe in the rural press a growing conviction of the paramount importance of looking well to the manure pile. This topic is never out of season. Even during the growing period and in harvest time, it is well to guard against its being forgotten. We are glad, therefore, to meet with an article such as the following from the *New York Times*, which might fitly be denominated, "a midsummer homily

on manure. Let every farmer who scans these pages make it a special duty to "read, mark, learn, and inwardly digest" the valuable suggestions given below. They contain the main secret of successful agriculture:

"At this season a farmer rarely looks over his stock of manure with satisfaction. It is one of those things of which he never has enough, and the need for which grows the more, the more he supplies the need. As soon as one wheat crop is safely housed the preparations for the next are in order, and the first thought is of the manure. The time has gone by when a farmer can afford to neglect this first necessity. American farming pays now only in proportion to the labor and skill exercised in manuring the soil. There are a few exceptions yet remaining in some of the newer western states, but foresighted farmers even there see clearly before them the early disappearance of the present order of things, and the gradual decrease of their crops. The farmer who depends upon his stables alone for his stock of manure fails greatly to secure all the advantages he possesses. There are many sources from which he may add to the stock thus derived. With the good farmer, his stables furnish mostly the leaven with which he may leaven a much greater lump, the basis upon which he may construct a larger heap. The art of composting is but little understood. A week or two ago, in describing the action of nitrogen, we referred incidentally to the value of this art. At the present we desire to impress upon our readers the propriety of putting the suggestions made in that article into immediate practice. The general condition of barnyards during the busy season of summer is a grievous thing to behold. The manure made in the winter that is past lies bleaching in the sun. The spring rains have washed away most of its soluble and most valuable portion. It is yet as coarse and unrotted as when the snow melted from its surface. The few additions which have been made to it are dry and fresh as when put out. In this condition it is useless as plant food. Decomposition must take place before organic matter, or anything that has lived and grown, can become a part of another living and growing thing. If the manure had been, or is even now gathered and piled into a compact heap, it will rapidly ferment and decompose. This fermentation and decomposition disorganizes the substances of which it is composed, and reduces it to its original elements in great part. Then it becomes fit food for plants. But the fermentation induced by moisture and heat in organic matter rapidly spreads through a mass from any central point. A large mass of sods, coarse weeds, rakings of harvest-fields, potato tops, swamp muck, animal offal, or such matters, is brought into active fermentation by the mixture through it of a small portion of stable manure, bone dust, sweeping of poultry houses, lime in a caustic state, or unleached wood ashes. In a month such a mass, say of a hundred loads, may be brought into condition for use upon fall wheat, and if only one-tenth of it consists of stable manure, the other nine-tenths have acquired an almost equal value. Where stable manure is not to be had, or bone dust cannot be afforded, but where the other materials are at hand, a valuable fertilizer may be obtained from them alone. Swamp muck, mixed with one twentieth its bulk of fresh lime, will be brought in four weeks of the present warm weather to a fine condition for use, and ten to twenty loads per acre of such a compost upon a field sown to wheat early in September will go far to replace an equal amount of fair stable manure. If there is an ample supply of stable manure, the admixture of lime is not advisable. It would set free the ammonia produced by the fermentation as soon as formed, and unless some absorbent were provided in large quantity, it would escape into the air and be lost. The better plan would be to sow the lime after the manure had been spread, and mixed with the soil. It should then be harrowed in with the seed, or left upon the surface to be dissolved by the rain and carried into the soil."

External Signs of Mature Grain.

Oats are subject to great loss by shelling when dead ripe, and the straw becomes of little value for fodder. Indeed, the straw of all grain loses much of its value for feed from this cause. This is a point to seriously consider when the exact time occurs, which not only gives the greatest value to the grain, but at the same time retains the greatest possible feeding value in the straw.

As there are so many contingencies which affect these results, some of which we have pointed out, it is important that farmers should make some experi-

ments themselves by cutting a few sheaves in different stages of ripeness, and accurately testing the results. When the straw changes from a green to a whitish yellow is generally the time to cut grain upon moist soils or in wet weather. At this time the grain will be plump and sufficiently soft to be crushed with the thumb nail, but yet will be dry and not doughy in the interior. Under other conditions it is better to allow the crop to stand until the straw becomes a darker yellow, and the grain harder.

If the grain is to be threshed as it comes from the field, it may remain until it is fully ripe and shells freely when rubbed in the hand, and that portion which has been selected for seed should be cut the last of all. The fine-skinned white wheats, such as the Diehl or White Mediterranean, and the light amber wheats, such as the Treadwell, need to become riper before cutting than the thicker skinned red wheats, which lose somewhat of their value for milling by standing until dead ripe.

The yield of flour from the hard wheats is lessened by allowing them to stand too long, and the loss by shelling is also greater. The same rule applies to rye and barley, and both these grains are of better color and of greater value when cut before complete maturity has deepened the natural tint of the husk.—N. Y. Herald.

Summer Fallowing

The following detail of experience in regard to summer fallowing by a correspondent of the *Practical Farmer*, is well worthy of a thoughtful perusal. It were well if all who till the soil would carry on their operations in a like observant manner, making record of the results for the benefit of others.—

In the summer of 1872 I fallowed 100 acres, ploughing it in June first time, and kept it free from weeds until seeding time, at which time the soil was in the very finest condition, a large portion having been ploughed three times and thoroughly harrowed and pulverized and packed with the roller.

It was seeded to wheat with drills at the usual season, which came up and stood the winter well, and grew off in the spring splendidly. But just as it commenced to head out it began to break down with its own weight, the straw being very soft and weak, and it did not fill, and was a total loss.

On other land adjoining it, which had been part in wheat and part in oats the same season, and was ploughed, harrowed, and rolled and seeded in the usual way, and at about the same time as the fallow ground, it stood up and filled well until the storms came, just before cutting time and blew it down. We cut it, however, while that on the fallow was worthless.

Another very striking effect of summer fallowing, which I am about to relate, happened last year in the following manner:

About the 10th of June there came a very heavy rain, (upon the already very wet soil)—it being a very wet and backward spring here, which prevented us from planting corn. We had one "land" of two acres that was ploughed, which we did not get planted in corn in consequence of the wet, and several acres which we did not plough at all. In the latter part of June we reploughed the two acres of land and planted to beans, but owing to the continued wet they did not come up; so on the 28th of July we ploughed these two acres the third time and sowed it to turnips; the bugs destroyed them as fast as they came up, and thus the ground was ploughed three times, but no crop grew upon it, not even a crop of weeds.

Now, the effect upon the ground is this. This season we have ploughed and planted the whole field in corn, the ground on either side of the two acres which had been ploughed three times last season was all ploughed and planted on the same day this season, the two acres working much the finest; but to-day the growing corn on each side of this fallow is very nearly twice as large as that on the fallow ground, and is of a dark, healthy growth, while the fallow is of a sickly, dull cast.

In another part of the field, which was ploughed once in July last, and was ploughed and planted this season the same as that part which was not ploughed at all last year, there is a marked difference in the appearance of the corn now growing upon it in favor of that which was not ploughed at all, and upon which a large growth of weeds and grass grew last season, and was burned off late in the fall.

Now, what is the cause of these results, which are not at all favorable to summer fallowing, or my farm at least?

The causes which suggest themselves to me are, first, that it is a requisite to the fertility of the soil

that the surface be covered with a growth of vegetation, which is the means, in a, or medium through which and by which the sun and air convey to the earth the properties which they contain and furnish to the soil for the benefit of future crops or vegetation.

Secondly, that the raw soil is deprived of this means of aeration from the air of such properties as it contains for future plant food, and also that it may be the soil is actually giving off at least some of its properties when exposed to the sun and sunshine without its natural covering.

With these facts before me, I conclude that the best way to improve our soil without applying the fertilizers is simply to rest it, but not to plough it.

Selection of Seed.

All the improvements that have taken place in vegetables, grains, or animals, from the original wild stock up to their most highly developed present condition, are due to selection of seed or parents and cultivation and feeding. Without the former the latter is ineffectual, for by selecting the best seed from a well-grown plant, the step gained is permanently held and made the base for another step upward, but if this selection is neglected the next crop reverts to its poor original type, and the gain which has been made is lost. It is well to consider this matter at the present time, when a selection of seed of the best and cleanest character can easily be made. If it is not convenient to select sufficient for the whole crop, a quantity sufficient for an acre or less might easily be selected if only by passing around the field and choosing the largest ears from the thrickest portion of the field, carefully avoiding the gathering the seed of a single weed. In this way we have selected from the edges of a wheat-field, where the plants were fully exposed to light and air, those ears only which were over six inches in length, and which grew from thickly stooled plants. A bushel of seed thus gathered, sown upon an acre of well prepared ground the next year, gave a produce of nearly forty bushels, many of the stools leaving thirty stalks and ears from six to nine inches in length. The produce of this second crop scattered through the neighborhood, being all sold for seed, greatly increased the average yield, and started a general effort toward improving the local varieties. It is not in foreign nor high-priced seed that excellence of quality consists altogether. When an extreme price is paid for selected seed, we do but pay for a service performed by another, that we may equally well perform for ourselves. It is necessary only that it be known what is to be done, and how to do it.

As the sheaves come in from the field the best of them may be laid aside until an opportunity occurs, when every stalk of chess, cockle, ox-eye daisy, or other weed should be picked out, and the grain thrashed by beating the sheaf with a light rod, so that the grain be not cracked or broken. The grain should then be cleaned from chaff, freed from all light seeds, and be kept by itself, and sown thinly by itself in a well-manured spot. Next season from this spot the best heads only should be selected, and the course repeated with care and perseverance for a few years. The payment for the care and labor thus bestowed will be an improved seed, possibly worth double that now grown.—N. Y. Times.

ONE GREAT REASON why the excrement of birds are so rich is, that the solid and liquid are combined in them.

The destruction of the crops and the scarcity of provisions consequent thereupon has compelled many Kosuth county, Iowa, farmers to abandon their farms for a time, and to seek more favorable localities, wherewithal to procure the staff of life. Nearly, if not quite, all of the able bodied men will have left the county within the next three weeks.

SALT acts upon the crop for the most part in an indirect manner. It does not contribute greatly to the growth of plants by its own elements, sodium and chlorine, neither of which are needed by agricultural plants in much quantity. It is therefore frequently of no perceptible advantage. Sometimes, however, a moderate dressing produces remarkable effects.

A POTATO CURIOSITY.—It was one of the Early Rose variety, and Mr. Dearing, of Athens, Georgia, dug it last year and kept it on account of its extraordinary size. When it was cut open the other day, it was found full of well developed young potatoes—a note-worthy number of them! This is one of the most bewildering cases of spontaneous generation on record. The old potato with its progeny has been sent to New York for the inspection of scientists.

Grasses and Forage Plants.

Cabbages as a Field Crop.

We took occasion in a recent article on filling up the gaps in turnip fields, to refer incidentally to the value of the cabbage as a forage plant, and to recommend it as useful to supply vacancies here and there. We are glad to find so able and influential a contemporary as the *American Agriculturist* speaking in high terms of the cabbage as a field crop, in the following extract, the excellence of which fully atones for its length.—

The value of the cabbage as food for stock is rarely considered. Yet as a fodder crop to be consumed in summer when the freshness of the pastures is past or as green winter fodder for young stock, fattening stock milch cows or sheep, we know of none better. The value of the cabbage as compared with other fodder, known to be of the greatest excellence, may be seen by the following statement of the composition of the various substances here mentioned: for instance, there is in 1,000 parts of

	Water	Ash.	Potash.	Lime.	Phosphoric acid.	Soda.	Moisture.
Green clover..	800	13.4	4.6	4.6	1.3	0.2	1.1
Green peas	815	13.7	6.6	3.9	1.3	—	1.1
Sugar beet roots.....	810	8.6	4.0	6.5	1.1	0.9	0.7
do leaves.....	80	0.5	1.9	0.6	0.3	1.6	0.7
Cabbage	855	12.1	6.0	1.9	2.0	0.5	0.7

Considering the excess of phosphoric acid, which is the most valuable of all the constituents of the ash, the cabbage is seen to be quite equal to a sugar beet as a fodder, while this excess gives to it a special value for young and growing or milking animals.

Again, if we compare the amount of valuable organic matter contained in clover and cabbage, we find the following, viz., in 100 parts of

	Albumen	Carbo-hydrates	Fat.	Crud fibre.
Clover ..	3.8	7.7	0.7	4.5
Cabbage ..	1.5	6.3	0.4	2.0
Turnips... 92	1.1	6.1	0.1	1.0

Thus, although cabbage is not so nutritious as clover, yet the large amount of water it contains makes it a valuable fodder for winter, when given with dry food, and it contains a very small portion of crude indigestible matter. It is, however, considerably more nutritious than turnips. The carbohydrates consist mainly of starch and gum. These substances are largely consumed in the respiratory process, and help greatly to maintain the natural heat of the animal. As a winter food, therefore, the cabbage is seen to possess a high value, being superior to turnips and only slightly inferior to clover. From our own experience with it, we consider it the very best food for cows previous to and after lambing, as it causes a large flow of milk; and also far better than turnip, because no cutting is necessary and there is no danger of choking. The same advantages apply to it as feed for milch cows. For its culture considerable previous preparation is necessary, and for a crop for next season it is not too early now to begin to prepare the seed-bed. One great advantage of this crop is that success on may be grown and an early crop may be ready for use in August, at which time it will be found of the greatest value for cows that are in milk. For this early crop the plants must be grown in the fall and wintered over in cold frames. The bed for the plants should be chosen in a dry, warm, sheltered place, and the soil should be carefully dug over with the spade or the fork, and made fine and mellow, and rich with well-rotted manure. For each acre of crop a bed of two square rods will be sufficient, upon which space one pound of seed should be sown. Drill sowing will be found more convenient than broadcast, as it will be necessary to keep the beds clear from weeds, and the hoe can be used between the drills. The seed should not be sown until the end of August or early in September. We have found the large Drumhead the best for this early crop, as it is very hardy, and upon rich ground comes forward quickly in the spring and grows to a large size. Heads weighing twenty pounds and over are not uncommon in a field of this variety. When the plants are about four weeks old, it is best to transplant them to the spaces between the drills, by which they are checked in their upward growth, and make more stocky plants with more spreading roots. The frames may be made by placing boards upon their edges between the rows, about four feet apart, and nailing strips to hold each pair of boards together. The strips may be nailed about three or four feet

apart, and loose boards laid between the strips to complete the covering. The loose boards may be removed during the days when the weather is not too severe, to give light and air to the plants. Upon very cold nights, straw or coarse hay may be heaped upon the frames for protection. The ground for this crop may be a corn or oat stubble ploughed in the fall and manured well with ten to twelve two-horse loads of manure directly upon the ploughed ground. The soil and manure should be mixed by a thorough harrowing or working with the cultivator, and then lightly cross ploughed and left rough until spring. In spring, as early as possible, the ground should be harrowed level and marked out into rows three feet apart. A dressing of 200 lbs. of fine boned superphosphate of lime or guano, spread in the rows, will be found of great benefit. The plants should be set out two feet apart in the rows, and troubled with the flea they should be dusted over with fine dry-slacked lime or soot. Clean cultivation is needed. A later crop may be made from plants sown in a hot-bed in March and planted out in May and June. For this crop we have found the East Vinningsstad an excellent variety, and growing to a good size. The late crop will be raised from seed sown in an open bed in May and planted in July, and the Marblehead Mammoth or the Drumhead are probably the best varieties. If a piece of clover sod can be ploughed and well manured early in this month (July), it will pay to purchase plants from the seed men if they have not been prepared at home. A good clover sod turned under has yielded us an excellent crop, and we have also raised a good crop by planting cabbages between the hills of corn and working them with the hoe. For these late crops and such a catch crop as that raised with corn we have found Peruvian guano or fish guano the best fertilizers. With a soil hard and a high crop every plant we have raised some good cabbages in a small space, but where a piece of ground can be properly devoted to them, it will be found the best ground where it cannot be had we would by a long way. We will not in every available space either with the corn or in vacant spaces among the rows, but a careful cultivation and liberal manuring. Seeds of an average weight of six pounds only are sown, there will be twenty tons of most excellent and healthful fodder. Such a crop is by no means beyond the range of probability where the preparation is good. We know of few crops which return a greater value for the labor expended, and it is one which stands heat and drought better than turnips, and equally as well as mangolds.

Fertilization of Wheat and other Grasses.

This subject, in its reference not only to wheat but to other grasses, appears to have received some attention in Germany, particularly by Professor Hillebrand, of Friburg, and is made the subject of a paper read by him before the Berlin Academy of Sciences, Oct 31, 1872.

A translation of this paper, from a translation published in the *London Gardener's Chronicle and*

With respect to their floral structure, grasses may be classified under the following heads:

1. *Dieious Grasses*.—Here, the two kinds of flowers, viz., staminate and pistillate, grow on distinct plants, one portion producing only staminate flowers and the other portion producing only pistillate flowers. Here is but a small number of species of this class, the buffalo-grass of the plains (*B. elata* & *lyboides*) are of them.

2. *Perfectly flowered Grasses*.—In this class, the staminate and pistillate flowers occupy different parts of the same plant. In Indian corn (*Z. mays*) the staminate flowers occupy the summit of the plant, while the pistillate are arranged upon an axis proceeding from the lower portion of the plant. In wild rice (*Zizania palustris*) the female flowers occupy the upper part of the panicle, and the staminate flowers the lower part.

3. *Polygamous Grasses*.—Here, a portion of the flowers may be perfect; that is, combining both sexes, and a portion will be either wholly staminate or wholly pistillate. Some species of *Panicum* and of *Amorpha* are of this description.

4. *Perfectly flowered Grasses*.—This includes the larger portion of grasses, especially of temperate climates. In this division fall also most of our cultivated grains, as wheat, oats, and barley.

In grasses of the first class, i.e., dieious grasses, the pistillate flowers must necessarily be fertilized by the pollen from entirely distinct plants, just as among higher plants the pistillate willow is fertilized by the pollen from the male willow of the same kind but on

a different tree. On the western plains, where the buffalo grass prevails, large patches may be found having only male flowers, and other patches occur having only female flowers. The seed of course is only produced upon these female or fertile plants. Until this fact was discovered, the two sexes were considered to be different species, and were known by different names.

In the dieious grasses also, as in the common Indian corn, (*Z. mays*) the pistillate flowers must be fertilized from without, the pistils are thrust out from the husky covering and exposed to the influence of any pollen which may fall upon them, hence the easiness with which different varieties, if planted in proximity, hybridize or mix with each other. The same is true to a large extent with polygamous grasses.

In the case of the perfectly flowered grasses we find several provisions existing, which affect the mode of fertilization.

1. In some species, as in the sweet-vernal grass, (*Anthoxanthum*) the stigmas are thrust out of the flower some time in advance of its own stamens, and are fertilized by pollen from earlier developed flowers. A similar arrangement exists in the meadow fox-tail (*Lycopurus*) and many other grasses. In these cases, there is usually only a short period during which the stigma remains fresh and capable of fertilization; in *Phalaris arundinacea*, however, Professor Hillebrand found the stigmas fresh and receptive for a longer time.

2. In by far the larger number of grasses, the male and female organs mature at the same time in the same flower; but even here, there are circumstances which in some species seem favorable to self-fertilization, and in others, to cross fertilization. Thus, in some, the anthers are partly extended beyond the points of the enclosing chaff, before the full expansion of the flower, so that the pollen first sheds itself to the fertilization of other flowers which are already open.—When the flower fully expands, and the rest of the pollen is shed, only a portion is likely to fall upon the stigmas of the same flower owing to the relative position of the parts, the greater part on being conveyed to other flowers. In the common oat (*Avena sativa*) the flowers in dry weather open in the afternoon and toward evening. The anthers hang out of the flower, and the pollen is, by far the greater extent, dispersed to other flowers; but in damp and cold weather the flowers remain closed, the pollen is shed within the flower, and self fertilization is inevitable. The flowers of rice (*Oryza sativa*) open in the morning, and the arrangement is nearly the same as in the oat, favorable to cross-fertilization.

In all the observations made by Professor Hillebrand on different species of barley, no flowers were found to be open, but all were self-fertilized, even before the spike or head was protruded from its sheath. However, another observer, Delphino, asserts that there is at least the possibility of cross-fertilization in barley.

With respect to wheat, Delphino asserts that the wheat that is necessarily self-fertilized has arisen unconsciously, from the fact that the flowers remain open only for a very brief time. In a wheat field only a very small proportion, perhaps one in four, of the flowers are open at one and the same time. The opening of the flower of wheat is a very interesting phenomenon, and happens with wonderful rapidity. While the flowers are still closed, a motion of the glumes is observable; these separate suddenly in a moment; at the same time, the anthers protrude laterally from the opening, they open and about one-third of the pollen falls inside the flower upon its own stigma, while the remaining two-thirds are dispersed into the air; the anthers are emptied in a moment, and the whole process does not occupy more than half a minute. The stigmas remain receptive for a considerably longer period, and can then receive the pollen of other flowers.

The conditions of fertilization must be observed in each single species, since closely allied species of the same genus show strikingly different phenomena in this respect, and moreover, each separate species may exhibit very different behavior when exposed to different conditions of climate.—Dr. George Vasey, in *Monthly Report of Department of Agriculture*.

CLOVER AND GYPSUM.—George Geddes writes the *New York Tribune* that he has on his farm, in Central New York, a field which from 1792 to 1873 has had no manure except clover grown on it and ploughed under, and that wheat, corn, oats, barley, meadow and pasture have been regularly taken from the land in five years rotation—the closing crop being winter wheat, which is a mothy and clover sowed. The clover has been regularly treated with gypsum for 50 years. He has particularly noticed it of late years, and says the land is more fertile now than it was 23 years ago.

Rural Architecture.

Notes on Building.

The art of building is usually divided into two parts—the art of construction, and the art of so designing the building that it shall please the eye, or be beautiful. Of course, the former division of the art is the most important, especially in those buildings which are erected entirely for trading purposes, but as nations advanced by trade or conquest increased in wealth, so they always appear to have more and more embellished their buildings until they became simply masses of ornament, and so ran into extremes, which true art always avoids. It is not, however, our object to direct attention to those principles which govern the art of beautifying a building but rather, as being more generally useful, to give hints from time to time by which some of the fundamental principles of the art of construction may become properly understood. Now, the true art of construction may be defined to be the skill to take the best advantage of those materials which Providence has created for our use, and in order to enable us to do this, we must look carefully into the nature of those materials, for such as the atoms are so is the whole. Thus in wood the small fibres which compose its substance are elongated, whereas in stone they approach the form of a globe, and wood is comparatively light and stone comparatively heavy. Now these properties at once fix the positions of both these materials in a building—the one is the main, the other is the carried and for covering over the space enclosed by the former; and all attempts to use either material for a purpose which nature did not intend it, are contrary to sound principles of construction, and involve extravagance in the long run. Thus a piece of wood placed upright in the ground as a support to a building—a frame house, in fact—can only be accounted a temporary arrangement, as it is not fitted to stand the various changes by which it may be surrounded. The alternate wet and heat to which it is exposed at the point of contact with the earth soon causes it to decay, although the same piece of timber, if placed on a floor or roof, would have remained sound for ages. Now, if we were to calculate how many times we should require to renew a post thus placed, and liable to decay during the time that a stone or brick wall would stand, it would be seen that it is extravagant to use it in such a position; and so with a stone if used as a lintel, in which position an unequal settlement of the building or an accidental blow are able to destroy it. It will thus be seen that the technical knowledge of the builder and carpenter is founded (if correct, which it is not invariably) on a knowledge of the nature of the material to be used. But it often happens that there is a choice of materials within reach of the builder which, from ignorance of the nature of those materials, he is unable to make use of. Some times material is dug out of foundations and carted away which would have served to build the walls with. For instance, a stiff clay, in a country such as Canada, with abundance of fuel, can easily be burnt into a hard brick substance very suitable for one of the materials for making into concrete. The writer has seen in the Old Country such clay thus burnt into a material for the farm roads, for which it is very suitable, though not so suitable as for mixing with lime and sand to form concrete, because it is scarcely hard enough for roads but quite hard enough to stand all the weight that is usually put on it in the walls of a building. But enough has been advanced to show that even in an art which is usually believed to be thoroughly understood it is proper not to be quite certain that no improvements can be made, while at the same time, even if not profitable in a money point of view, it is as well to understand the reason

why such and such a material is proper for such and such a purpose. With this view, we intend to give a few articles from time to time on the nature of the various building materials, and to show how, when and where they should be employed.

Hygiene of Dwellings.

Remarkable testimony as to the permeability of the ground, and of the foundation of our houses, has been given by gas emanations into houses which had no gas laid on. I know cases where persons were poisoned and killed by gas which had to travel for twenty feet under the street, and then through the foundation, cellar-vaults, and flooring of the ground-floor rooms. As these kinds of accidents happen only in winter, they have been brought forward as a proof that the frozen soil did not allow the gas to escape straight upwards, but drove it into the house. I have told you already why I take frozen soil to be not more air-tight than when not frozen. In such cases the penetration of gas into the houses is facilitated by the current in the ground-air caused by the house. The house being warmer inside than the external air, acts like a heated chimney on its surroundings, and chiefly on the ground upon which it stands and the air therein, which we will call the ground air.

The movement of gas through the ground into the house may give no warning that the ground air is in continual intercourse with our house, and may become the introducer of many kinds of lodgers. These lodgers may be either found out, or cause injury at once, like gas; or they may, without betraying their presence in any way, become enemies, or associate themselves with other elements, and increase their activity. The evil resulting therefrom continues till the store of these creatures of the ground air is consumed. Our senses may remain unaware of noxious things which we take in, in one shape or another, through air, water or food. According to Pettenkofer, the air in our houses becomes unwholesome when the carbonic acid in it, provided it be derived from the respiration of animals, rises from the normal proportion of four parts in 10,000 to one part in 10,000. The experiments of Dr. Angus Smith and Dr. Hammond have shown that the organic matter in the air, which increases in proportion to the amount of carbonic acid, is by far a more deadly impurity than the gas.—*Sanitarian*.

Agricultural Implements.

Transmission of Power by Wire Ropes.

At a meeting of the Institution of Mechanical Engineers, London, Mr. Morrison described the mode of transmission introduced by the Bros. Hirn, and now extensively used on the Upper Rhine. It appeared that they first used flat metallic bands to transmit the power; but these being found objectionable, round wire rope was subsequently adopted instead. The rope is usually made of fine steel wire, as it must be very tough and flexible. The wire rope, which is about one inch in diameter, and contains 72 strands, is run at a high velocity, over pulleys of large diameter. The total loss of power by friction, etc., was stated to be 2½ per cent., and it appeared that of 120 horse-power existing at the motor wheel, 100 horse-power was utilized at 2,200 yards distance; but it could not be elicited in the discussion how these figures had been arrived at. It was also estimated that iron shafting, capable of transmitting the same power, would involve the use of 3,000 tons of material. Various materials were tried for facing the grooves of the pulleys, such as copper, leather, etc., as there either was excessive wear in the groove, or the facing destroyed the rope. The best arrangement was found to be a dovetail groove, filled in with gutta-percha, in which the rope soon made a channel for itself, after which the wear was not excessive. The pulleys run at the rate of 50 miles per hour, and the ropes last from one and a-half to two years.

Dr. Siemens remarked that there was no doubt that, by running ropes from 30 to 60 miles per hour over pulleys, a large amount of power could be transmitted with but little waste.

Mr. Win. Smith said that in 1837, soon after his father had invented wire rope, it was used very similarly, and in 1839 and 1840 it was introduced on the Regent's Canal, for towing barges through the tunnel beneath the Harrow Road, and it was also taken three and a-half or four miles along the bank of the canal. The bargemen simply threw a catch line over the running wire, and let go when necessary. It was tested against the screw, duck-foot propeller and others, but was not found to be economic. He had many times seen a similar application of the principle; the fly rope of an ordinary ropery was an illustration, but that had long since become obsolete. He would like to know whether the paper claimed, as a novelty, the introduction of endless wire ropes for transmitting power to a distance, if so, he doubted whether the claim could be substantiated. If the novelty merely consisted in the running of the ropes at a high velocity, which was all he could see in it, there might be something in the claim.—*Rural Press*.

A Natural Hygrometer.

A plan of measuring the humidity of the atmosphere by means of oats, either the wild or cultivated, is thus given by a French scientist, M. H. De Labouchere:—

The grain of the common oat of agriculture, and also of the wild oat, is surmounted by a helical barb, which is terminated by a right-angled elbow. Let one of these grains at maturity be cut in half, and the upper half be attached by means of glue to the centre of a circle marked upon the plane surface of a piece of wood or metal. To the extremity of the barb may be attached a fine piece of straw, which will serve as a needle, and amplify the indications. To graduate this simple little instrument, place it in very hot air, and mark 0 at the point indicated by the needle; then place it in an atmosphere saturated with humidity by means of wet cloths, and mark the point indicated by the needle 100, and divide the interval between 0 and 100 into one hundred equal parts. The straw needle may be made of considerable length so as to give its indications clearly. Such a hygrometer costs but little, and is always comparable with itself.

FARM MACHINES.—The *World* says: Knowledge of machinery is becoming one of the most important requisites in a farmer or a farmer's help. No machine should go upon any farm without the farmer comprehending it in all its parts, the requirement and relation of each part to the other, how to adjust and care for it, how to remedy difficulties that may arise, and keep the whole machine in proper working condition without the aid of a machinist, unless in exceptional circumstances. It should be the first duty of the hued help to learn the same lesson, if he is to be entrusted with the machine's use. This is urged as a matter of economy. It is frequently the case that a non-observant farmer loses the time of his men and his own, besides making a bill at the blacksmith's or machinist's, when a little gumption and ten minutes' time properly applied would have saved all loss.

MOWING AND REAPING MACHINES.—English inventors appear to be working very vigorously to perfect existing agricultural implements, as well as introduce new forms. The features of a new machine consist, first, in so adjusting the draught pole and driver's seat according to the nature of the crop or the weight of the driver, as not to cause any undue weight to bear on the horses' necks while working, which is accomplished by having slotted holes in that part of the frame to which the draught pole is attached, so that the draught pole, together with the hole of the apparatus for carrying the driver, may be shifted forward or backward and thus be in a proper balance for the easy working of the horses. Secondly, in a method of adjusting the cutters and fingers so as to point up or down, as the nature of the crop to be operated upon may require, by using a lever or link upon the gear frame, to adjust its angle to the draught pole. A new English patent consists in the addition, to any ordinary reaping and mowing machine, of a second or under set of no usual knives or cutters, which may be made stationary by fixing them to the finger bar, or other suitable bar, or be actuated by an extra crank and connecting rod for the purpose.

Horticulture.

EDITOR—D. W. BEADLE, CORRESPONDING MEMBER OF THE
ROYAL HORTICULTURAL SOCIETY, ENGLAND.

THE ORCHARD.

Seasonable Notes.

Last months' operations having been properly attended to, the careful, intelligent orchardist will now have the satisfaction of seeing his trees in a thrifty and fruitful condition; and may fairly anticipate an adequate return for the labor already bestowed. But all danger is not yet past. Nursery trees carelessly transplanted in spring, and such as, however well planted, have not had the benefit of a proper mulching, will require the utmost skill and vigilance to bring them safely through the scorching ordeal to which they will be subjected during the present and next month. Where this mulching has been overlooked, let it be attended to at once. A heavy layer of old straw or hay applied around the tree, and extending to a distance proportionate to the length of the roots, will tend to ward off the scorching effects of the sun's rays, and at the same time ensure necessary coolness and moisture.

INSECTS of all kinds appear to be more numerous and destructive this season than we have known them for years past, and the utmost vigilance ought to be exercised with the view of becoming better acquainted with their habits, and of discovering the simplest and most effective means of destroying them. The fall web-worm will be found infesting the fruit trees in some localities in great numbers. The webs should be carefully removed by hand and they and their crawling occupants destroyed, unless, indeed, the latter have spread to the branches, in which case the infested twigs should be removed and burned. All unripe fruit falling under apple, plum, cherry and other fruit trees should be carefully gathered and fed to the pigs, as in nine cases out of ten, such fruit will be found the receptacles of insects, which, if left to the natural order of things will turn up at some future day to occasion still greater loss and annoyance.

WEEDS, always a nuisance, will be found especially so during the next few weeks. They require no mulching. On the contrary, after they once take the lead, they invariably appropriate to themselves as a mulch every other species of vegetable growth which unfortunately happens to fall within the range of their blighting influence. The larger sorts, such as burdocks, thistles, mulleins, &c., should be rooted out entire, and the tops carefully burned. Use a horse hoe between the rows of large trees, and a hand hoe among the smaller ones. If weeds are allowed to ripen and shed their seeds now, the orchardist may have, not next season only, but also the following and a good many more, during which to repent of his mistake.

BUDDING may be attended to during the present and next month. See to it that the buds are perfectly developed, and that the bark rises freely from the stocks to be budded. The maturity of the buds may be hastened ten or twelve days, by pinching the tips of the shoots. Select a cool, moist day or evening for the operation.

Old Orchards.

The country where I write is a rich alluvial soil, the surface generally a monotonous plain. Being included in that tract of country long and well known as the "Black Swamp," its features are best expressed by giving it the title. The limestone ridges, generally capped with lacustrine sand, are the only observable changes of the level. The whole country is underlaid with limestone rock, varying in depth from one to ten feet or more, while streaks of fossiliferous limestone crop out in various places, rendering sometimes whole fields unfit for cultivation.

The whole country slopes northward from two to five feet per mile. Perhaps no part of Ohio produces finer apples or more regular bearing than this region. Peaches succeed tolerably well, but pears are considered short lived on standard stock. In our oldest orchards, many trees are declining and even dying outright without showing any sign of disease. This is mostly the case in orchards which have been left uncultivated and where the drainage is imperfect.

I would here submit a treatment for such as desire to save their old orchards, believing that an apple orchard of a century's growth (with proper culture) may be both vigorous and prolific. Since trees must either advance or decline year by year, it is safe to assume that, where trees decline suddenly, they may have either exhausted their available resources or some accident has happened them.

In setting out an orchard, each tree has a distinctly defined boundary, partly natural to the depth of the soil, and partly artificial, extending to the line of contact with the next tree. Young trees may find sufficient nourishment within these boundaries to succeed well, but as year by year they progress in height and width, we are apt to forget that the roots early assume corresponding proportions, and when the branches begin to mingle from tree to tree, be assured that roots are doing the same. Now relief must come. Deep and thorough draining will multiply the natural boundary. Thus, three feet deep and thirty-three feet square will give as much scope as eighteen inches deep and forty-six feet square, while enriching the surface with artificial manures will still further enlarge the amount of free nourishment on the same boundaries.

Lover of the country, if your old orchard is losing its vigor, I advise you to apply the following treatment:—First, prune thoroughly. Second, plough your orchard shallow around the trees, but as deep as possible midway between, so as to sever the inter-lapping roots. Third, manure heavily all over the surface, and cultivate clean one or two years. Fourth, if necessary, lay an under drain three feet deep midway between each row. After a rain take a hoe and scrape off the old bark from the trunks, and the Lord will crown your labors with such fruits as make glad the hearts of the children of men.—*Western Rural.*

Homestead Ornamentation

A few suggestions in regard to the location of buildings, and the planting and laying off of grounds, may not be out of place. For your house, choose high, rolling ground. Let your house stand six to twelve rods back from the road. Never, upon any account, let your barn or farm buildings, cattle-yards or pens, coal-yards or anything unsightly, come between your house and the road, or prominently in view.

Plant your trees in groups, imitating nature. Don't fall into the error of planting everything in stiff rows. Nothing so much shows the lack of good taste. Give curves and rounded corners when possible.

The approach to the house should come from a side direction, and wind toward the house with a natural curve. Not that it should be made crooked and tortuous, but the trees should be so arranged, in clumps, as to make it seem the most natural and easy way of approach.

There is another thing you should never neglect. Turn out all hands for, say some half day, or more if necessary. Don't wait until you have nothing to do, but make a general clearing up of the yard and premises. Gather the old rakes, mowers, hayrakes and racks, and other odds and ends of broken and dilapidated machinery, and consign them to the woodpile and old iron heaps. Such tools as are really valuable, put away safely; and you will be astonished at the great improvement a few hours time has made in the neatness and tidy look of your premises.

In fitting up a place, difficulties are often experienced. We want a grassy lawn, and we want trees, but trees will not grow well in grass. It is best, therefore, to plant the trees first, and cultivate the ground in hoed crops for several years, until the tree gets a good start before seeding down. Small fenced-in yards should be avoided—they give your place a contracted, pinched-up look. Fences should not be used more than is absolutely necessary. The garden ground, however, may be included with the house and lawn, but the fence in this case should be made of some light kind, that will obstruct the view of the grounds as little as possible.—*Western Rural.*

A New Tree Label.

We were shown a few days since a metallic tree label, invented by the artist George F. Frauenberger and W. C. Barry, of Mt. Hope nurseries, who were shipping to Washington an order for several thousands for the national arboretum. The whole thing consists of a cast iron stake about two feet long, supporting a metallic case containing, printed on water-proof card paper, the English name of the tree, the botanical name, and the name of the family to which it belongs. This label is covered with glass in the metallic frame, and supported on the stake at such an angle that you read it with ease, standing upright.

These labels strike us as admirably adapted to public parks and arboretums, to specimen grounds of nurseries, and even to large private grounds. In such places they will not only serve to keep the names for the information of the owner, but will reveal to the visitor the common name of a specimen, its botanical name, and its generic or family name, thus bringing the masses into greater familiarity with botany.—*American Rural Home.*

Orcharding Upon the Open Prairies of Northern Iowa.

I have just been looking over a paper hastily prepared for the Iowa State Horticultural Report for 1867. What I then wrote I find in many respects exactly what I would write to-day, except in the matter of iron-clad varieties. We have added many very new excellent and very hardy kinds of apples to our list since then. I then laid down an essential, 1st. A proper selection of varieties. 2nd. Planting on high ground, planting on back furrowed ridges quite deep, and ridging up by ploughing towards the trees. 3d. Inducing early growth, and checking late growth by ploughing late in June and sowing to buckwheat. 4th. Forming a low dense top, gradually thinning out after the trees attain some age, and the trees having borne their first crop of fruit.

I would only say at this time, I have worked my orchards on this plan, and with the best results. My oldest orchards are now ridged up very prominently by continued ploughing towards the trees, and I can say that they went through last winter's ordeal with less damage than any orchards I have seen in the state. In over forty acres of young orchard treated in the same way there is not to be found a dead tree of any variety that ever ought to be planted upon the open prairies of Central or Northern Iowa. By planting upon back furrowed ridges from six to eight inches deeper than the trees stood in the nursery, and then throwing the roots under deeper by ploughing towards the trees, a double purpose is accomplished—the crowns of the trees are well protected, while the terminal roots reach the surface in the rows, inducing early bearing.

By ploughing about the 15th of June lightly and sowing to buckwheat the early spring growth is continued, and a late fall growth, especially upon well ridged up trees, is rarely to be feared. The tendency of low dense tops is to screen the trunks from the effects of the sun, summer and winter, and also tends to early bearing, by extra vigor of growth in the main branches.—*Cor. Iowa Homestead.*

To Foretell the Apple Crop.

This is how an English writer talks of foretelling the apple crop, and judges of the prospective English one:

I may remark that experienced fruit-growers like to see these well swelled out at this the earliest period of their growth, as a good bold bloom portends a successful fruit-setting if nothing more; moreover, they like in the case of apples, for the petals when they fall to do so flatways, and not to be curled up, and the larger each petal is than a shilling the better they are liked. In the past season I have heard many assert they have measured some larger than a half crown but I have not noticed any of that size. Still they are large, and before the setting-in of the cold weather, on April 29th, the bloom was exceedingly rich and good, and I am not sure yet that the cold weather has done them much harm up to the time I write, May 12th.

THE FRUIT GARDEN.

Seasonable Notes.

RASPBERRIES—The old canes will soon have ceased bearing, and should then be cut out, that more room and air may be given to the young canes that are growing up to supply their place. A liberal supply of well rotted manure should be forked in among the rows, particularly over the roots around the stools. The roots of raspberry bushes should not be disturbed when cultivating ground in proximity.

STRAWBERRIES—New beds may be planted out about the end of this month or the beginning of September, although many prefer planting in April or the early part of May. If fall planting is adopted, the newly planted beds should receive a dressing of fine, well rotted stable manure, or, better still, an application of wood ashes or coarse bone dust well worked in with the rake. Remove from the old beds all runners not required for forming new plants.

BLACKBERRIES—As stated last month, three or four canes only should be allowed to grow, and these should be pinched off when they attain a height of about five and a half or six feet. The laterals should be trimmed to eighteen or twenty inches.

GRAPES—Fasten the vines to trellises, and apply sulphur on the first appearance of mildew.

Pears with Hardy Blossoms.

In these times, when our prospects of fruit are often dashed away by a single sharp frost, and when every spring season fruit growers' hearts are full of perpetual anxiety, it is worth while to call attention to the observations of a correspondent of the *Prairie Farmer* (B. O. Curtis, Paris, Ill.), who speaks from experience:—

Louise Bonne de Jersey is one of the most noted examples of hardy blossoms.

Belle Lucrative appears as if it particularly delighted in producing a full crop, when all others fail.

Femish Beauty does not bloom in as great profusion as some others, but every blossom sticks, and a good crop of fruit is sure to follow.

Snoa is Orange—Some.

The *White Doyenne*, *Serkel*, *Urbaniste* and *Julienne* may be named as not only among the hardiest pear trees, but as having blossoms possessing, in a high degree, the quality of resisting the frost.

The *Bartlett*, *Vicar*, *Duchess*, *Glout*, *Morceau*, and *Beurre Clairvaux* are scarcely less productive, but are more or less likely to be injured.

Never allow flowers to be watered or sprinkled with cold water, especially in cold weather. Tepid water is always better, even in summer.

Large and Small Fruits Together.

This is the way that Wm Parry, of New Jersey, raises large and small fruits together. In 1863 he planted an apple orchard, setting the trees forty feet apart each way, then set a row of early Richmond cherry trees each way between them requiring three times as many cherry as apple trees; then a row of Rochester blackberries in the rows and between them, being ten feet apart; then a row of strawberries between them, leaving five feet space for cultivation. Next year, 1864, the strawberries produced the only crop gathered; they yielded \$200 per acre. In 1865 the strawberries yielded about half as much, and after picking the fruit the vines were ploughed under, and turnips planted in July, which produced a good fall crop; that same year the blackberries commenced to bear a little and sent up a vigorous growth of canes, which gave a full crop of fruit in 1864, and continued to do so for five years, yielding \$200 per acre annually. Last year they did poorly, and have been removed to give more room to the trees which now sufficiently occupy the ground. The cherry trees commenced bearing the third year, and have borne full crops every year since, the quality increasing each year with the size of the trees. For several years the fruit has been worth from \$200 to \$300 per acre, and sometimes more, the last year we contracted with the proprietors of a canning factory near by, for the whole crop at ten cents per pound; there were eighty trees to the acre, and many of them yielded seventy-five pounds each. The apple trees have made a fine

growth, and commenced bearing fruit. The cherry trees in the apple rows began to crowd them, and will soon be removed, while those standing in the centre of four apple trees will have plenty of room for many years, and can remain, leaving as many rows of cherry trees forty feet apart, as of apples on the same ground. By pursuing the above plan, there may be taken from \$200 to \$300 worth of fruit per acre before the apple trees acquire size enough to bear much fruit, and thus avoid the usual objection urged against the planting of apple orchards, viz: that it requires so long a time before any profit can be derived from the land thus occupied.

The Pear as a hardy Fruit in the North-West.

The conditions requisite for the successful culture of the pear are alike all over the north-west; yet they are so little understood that failure and discouragement is the rule, and success the exception everywhere, over this broad region.

I have been engaged in pear culture since 1849, fully a quarter of a century, and have no complaint of want of success to make. I now have trees nearly 30 years old, of Pennsylvania, Grey and White Doyenne, Stevens' Genesee and Glout's Morceau, the latter most liable to blight of any. They uniformly give good crops, and in the severe winter of 1872, so disastrous to fruit-growers, I did not lose a single pear tree, though the early harvest and a number of other hardy apple trees were destroyed.

I do not think any special soil necessary to succeed with the pear, provided only that it be dry. Plant out either dwarfs, or quince or standards, or pear roots. Cultivate well the first five years, allowing no grass about the trees. Every autumn place a barrow load of stable manure round each tree, and scatter over the roots of all the coal and wood ashes of the house. Cease cultivating when the trees begin to bear, but continue the dressings of manure and ashes every year without intermission.

These are very simple rules, not at all hard to comply with, yet from the general want of success in the neighborhood, I know those who have been told of them have lacked faith to pursue them. Yet where they are followed, I know that blight will be unknown and that the pear will endure winters of 30° and 40° below zero with more impunity than any apple tree I have ever yet seen.—*Our Prairie Farmer*.

Preserving Fruit.

As we cannot command the weather, we must sometimes begin with wet fruit. But it should always be obtained as dry as possible, and it will often be better to wait a few days, or even a week, for the chance of a few dry hours for gathering the fruit for preserving, if wet should set in at the time of ripening. Having it gathered and picked, the next business is to stew it over a steady fire; the cheapest iron pot will make as good preserves as the most expensive preserving pan. But the best tools are the best, and a proper brass pan will do the work more quickly and surely than any other vessel. One of the objects in cooking is to get rid of a considerable proportion of the water contained in the fruit, and a shallow pan exposes a larger surface of fruit both to the fire below and the air above than is possible in a saucepan, and in consequence effects a saving of time and is calculated to turn out a better article. A few large wooden spoons, a hair sieve, and a muslin strainer are equally requisite, and as they cost but little, and their uses are fully understood, it will not be necessary to do more than mention them; jars, bottles, and other suitable receptacles follow as matters of course. They should all be dry and clean, and capable of being closely sealed, to preserve their contents from the action of the atmosphere. The usual allowance of sugar is three-quarters of a pound to every pound of fruit. As a rule, to use less sugar will be to jeopardize the keeping of the preserve; but it must be remembered that an excess of sugar destroys the flavor of the fruit, and whenever the average allowance of sugar can be reduced it will be an advantage, for the flavor of the fruit will then come out more brightly and distinctly. As fruits differ in quality, so do the same fruits in different seasons differ, and there is therefore room for the exercise of judgment in this as in all other practical matters.—*The Gardener's Magazine*.

IF YOU HAVE BEEN pickling or handling acid fruit and have stained your hands, wash them in clear water, wipe them lightly, and while they are yet moist strike a match and shut your hands around it so as to catch the smoke, and the stain will disappear.

THE VEGETABLE GARDEN.

Seasonable Notes.

CABBAGES—A frequent and liberal application of liquid manure, or a solution of hen manure in soft rain water, will be found a powerful stimulant to the growth of cabbages and cauliflowers. The soil should be frequently stirred with the hoe for the double purpose of destroying weeds and keeping it moist and friable.

ONIONS—These may be pulled soon after the tops become wilted or fall down. Dry thoroughly in the sun, and afterwards store in a dry airy place.

CARROTS—Hoe between the rows while it is possible to do so, and keep the rows themselves properly thinned and weeded.

CORN—Cultivate freely between the rows. Remove all imperfect or smutty ears and burn the latter. Vacant spots may still be sowed for late turnips.

TOMATOES—The vine should be kept firmly fastened to trellises to prevent the fruit touching the ground.

CUCUMBERS, MELONS, &c.—Cucumbers for pickling should be gathered when quite small, say two to three inches in length, as they are much more tender and palatable when of that size than if allowed to grow very large. The vines of melons and squashes should be pinched back if disposed to "run."

Seasonable Hints on the Tomato.

The following article by a "valued" correspondent of the *Farmer (Eng.)* will meet the wants of those interested in the culture of the tomato:—

It is customary, and has been so for many years past, to proceed upon the stunting process, in regard to the culture of the tomato; the inference being, that the more the plants were checked or starved when young—a practice generally followed out in detail in connection with young tomato plants—the larger would be the produce and the earlier! I confess to have been an entire follower of this kind of practice, and should have continued such, doubtless, had I not entered heartily into the culture and the improvement of the class. I may state that I have grown 45 lb. avoirdupois of fruit, upon a plant grown in a single 16-sized pot. If we study the prominent habits, characteristics, and peculiarities of the plant, we readily perceive the fact, that a good crop of tomato fruit cannot be grown upon, or by any plant, without first, a strong good growth. Large bunches of large fruits being simply accessory to a free, strong healthy growth, obviously it is the interest of the culturist to act in a manner to insure such a growth, and in view of perfect ripening, to insure it at the earliest possible date. Is then the stunted, checked, and cramped process followed, specially followed in practice in the very infancy of the plants, likely to help in these endeavors? We say no, quite the contrary.

What I advise, therefore, is simply this. Do all you possibly can to avoid a check being given to the plants in any form whatever, from the moment the seeds vegetate until they are safely landed with a profusion of ripened fruit. Thus I encourage those who may have sown late, and who have their plants young, healthy, and in full and vigorous growth, to keep them so until planted out finally. Plant them into the richest of soils, under, or perhaps I should say, at the foot of hot sun bound walls, and together with endeavor to re-imbue them with mud, water and natural robustness. Whilst this is being done, the plants are progressing vigorously on their way, until the ripening of fruit.

As the plants progress in growth, do not keep pinching and pinching them back constantly. Only pinch them back by simply "stopping" them at the point in about fourteen days after they are planted out, and once again when the shoots, so induced to increase in number, have attained a few inches in length, considering that all undue stopping, or pinching off, whether of shoots or leaves, decreases the growth and action of the plant.

Secure the young shoots carefully as they grow, by the customary means of tacking them to the wall, &c., and do not fail to give them root waterings (alternately clear and manurial) as frequently as may be desirable, having under consideration the weather itself. So soon as the strong young shoots have advanced, so as to exhibit two different bunches of bloom on each, pinch out the point carefully at or

beyond one-half point and above the upper bloom at the same time stop all other shoots that put around the base of the plant, if they show no buds distinctly, and remove some of the thickest of the young leaves; but by no means destroy, or in any wise injure the largest of or ones, as it should be the cultivator's aim to obtain the most perfect to the last, as they may be expected to perform most of the ultimate work comprised in the proper perfecting of the fruits. Continue afterwards to stop, by pinching back all young shoots that may form and attempt to grow, and when once the fruit exhibits signs of swellings, give more than ordinary root waterings, as advised. It will not be necessary to give more root waterings unless the weather becomes very dry.

Tomato Culture.

We find in a late issue of the *Granville Telegraph* the following reflections upon the culture of the tomato: During the few past years efforts have been made to improve the tomato in size, solidity, flavor and earliness of maturity. There has been progress in all these directions, not perhaps so much actual improvement as many of us believe, but such good tomatoes have in the new kinds sustained their reputation. Old varieties seem to gradually give way or else people tire of them, and they thus disappear. We have no tomato the same as we had thirty years ago, at least under the same name, and yet we had them pretty large and good even at that day. Without entering closely into the historical part of this inquiry, we yet think our tomatoes have really improved in smoothness and quality as a general thing, when any one has taken any interest in having a good article; and in tomato culture there certainly has been marked improvement. Recently there have been brought before the community several ideas worthy of note by those who strive for the very best article. In regard to training, it is asserted that much better fruit—especially for eating raw—can be had from plants fastened to slant stakes, than when the plants are allowed to run at will over the ground, or even when they are fastened to slanting trellises. Heavy stakes are required of course, as the great weight of a plant in fruit cannot be borne by light stakes. In regard to training the plants, much attention has been given to training the branches to within a few buds of where the fruit is to set. Those who have followed this practice judiciously report good results. But the latest novelty in tomato culture is in the matter of root pruning in order to produce earliness. In this matter some surprising results have been achieved according to those who have given in their experience. While the plants are young they are transplanted several times, which of course destroys some of the roots, and after they are put out into their final resting-places a spade is once in a while thrust down into the ground a foot or so from the main stalk. In this, of course, size and perhaps quality is sacrificed to a few weeks' earliness; but many are willing to pay this penalty for the sake of the earliness. The principle here is much the same as is often done to get early grapes when the vine of the bunch is taken off. The supply of food being checked, the result is earlier fruit but with slightly inferior flavor.

These are the leading suggestions that have been made in improved tomato culture during the past few years—not great improvements, it is true, but still not without value.

MELON CULTURE.—The best soil, says *The Rural Messenger*, is that which admits of ready drainage. Watery as the fruit is, it does not require much rain to produce it. In fact, the vines flourish and bear even on a bank of sand. We would then select the lightest piece of ground available—gray and sandy—and put it in good order, using plenty of rotten manure to each hill. Digging holes of sufficient size, and depositing the manure in them during the winter, is doubtless the method to be preferred, but if this has not already been done we must resort to some other plan. We would still make an excavation, and manure liberally, with a view of retaining moisture in time of drouth. Much depends on giving the plants a vigorous start. Force their early growth with a free application of bone phosphate to the hill. Keep the ground clear of grass and well stirred until the vines begin to cover it, but as the roots run to the full length of the vines, and grow as fast the working should not be more than two or three inches deep. With this treatment we believe there would be few failures in growing water melons, and as they are a favorite with all classes, it is well worth the trouble, whether for market or private use.

THE LOWER GARDEN.

Seasonable Notes.

DALIAS and other high stemmed plants should be supplied with stakes to prevent injury from high winds.

PERENNIAL seeds should be sown in a clean bed of fine soil as fast as they ripen, and the bed must be kept well watered and weeded.

EDGINGS, to look at all well, must be kept neatly trimmed. Keep the grass short, and dress the margins of the edgings with a sharp knife. Box edging could be clipped this month.

CLIMBERS, POTTED PLANTS, &c.—The former should be neatly fastened to their stakes or trellises; the latter should be watered frequently.

NEW ROSE, "GENERAL VON MOLTKE."—This new hybrid perpetual rose is advertised in England as the only real scarlet yet known.

NEW TEA ROSE, "MADAME FRANCOIS JANIS."—*The Florist and Pomologist* says this new rose has been recently exhibited the past season, and promises to be exceedingly popular for cutting. The bud is described as beautiful, and deep yellow in color.

ROSE, "SIR GARNET WOLSELEY."—*The Gardener Magazine (English)* says a first-class certificate was conferred, at the great rose show of the Royal Agricultural Society, upon the above new rose, which it thus describes:—A hybrid perpetual, likely to prove of great value for exhibition purposes; the flower large and globular, full, and of fine form; the color fiery crimson. It is said to be a seedling from Prince Camille de Rohan.

The Calla Lily.

We do not know of a more beautiful winter blooming plant than the old-fashioned Calla Lily. It succeeds so well in the window, needing very little care excepting an abundance of water and an occasional dusting of the leaves, that we recommend every lover of flowers to try it. A writer in a Detroit paper gives a very sensible summing up of the requisite methods of culture:

1. After blooming, dry off slowly but thoroughly.
2. Keep the roots simply from drying out entirely during the season of rest.
3. Start slowly in light, rich soil, with little water at first, increasing as growth increases.
4. Plunge if possible, in stagnant water until wanted for the house, or there is danger of frost.
5. Re-pot in rich mucky soil.
6. Give plenty of water while the plants are growing and blooming.
7. Give plenty of light and sunshine.

Names of Plants—English vs. Latin.

My friend asks, "What is this pretty flower?" "Galasine azurea." "What a long name!" "I cannot shorten it." "But why have a Latin name? Better call it *blue smiler* in plain English." "Then you like such names as Sham-ock, Blue Bells, Eglantine, and Culowices?" "Certainly every one can understand them." "You can recognize the plants?" "Easily." "Well, I can show you in print endless associations as to what they are. On the other hand, defy you to produce two persons who disagree as to what is meant by *Eucharis amazonica*. Now look at page 32 of our journal. Would you like some of the plants described in the *American Christian Weekly*? The night-blooming jasmine must be very desirable, but what European nurseryman could understand the name? Looking down Don's long list he would at last hit upon *Jasminum noctiflorum*, but as this is a native of Sierra Leone, it is not likely to be the right plant. Paradoxical as it may seem, Latin is in such matters more intelligible even to an Englishman than English."—*G. S. in Journal of Horticulture.*

Lilium Brownii.

Mr. Robert Stark, of Woodstock, writes: "My *Lilium Brownii* has stood two winters. The first spring after planting (in fall) it flowered, and there are now two shoots, with one flower bud on one and two on the other. It was not covered either by snow or anything else.

How to Take Care of Bulbs.

As soon as their beauty of flower is over, we always cut off the flower-stems just below the lowest flower, and for this reason:—The hyacinth and tulip both eed freely, particularly the latter; if the bulb is forming seed, its strength is wasted in a great measure by that process; whereas, if the flower-stem is cut off, the bulb has nothing to do but to prepare itself with vigor for blossoming in the ensuing year. We pay great attention to the protection of the bases of both hyacinths and tulips, and never allow them to be interfered with until nature indicates, by the decay of their points, that the bulb is preparing for rest. We then follow a course with both hyacinths and tulips which we believe many do not; that is, we take them up before the leaves are quite decayed, and for this reason:—we believe that both of them, after the bulbs have attained this period of growth, are only weakened by remaining in the ground, because the offsets are living upon the parent bulb, and consequently weakening it for the flower of the following year. If a cultivator wishes for stock, he should let his bulbs remain until the leaves are quite decayed. If he wants his bulbs to flower a beauty again, he should follow the practice above mentioned.

When taken up, the bulbs should be removed to a shed sheltered from the sun, but free to the air, and any earth adhering to the fibres or roots should remain for some little time; after two or three days they should be looked after, and the loose earth shaken from them; and, as the leaves decay, they should be occasionally removed. We have generally placed our bulbs at first on the ground, in the tool-shed, and, as they got dry, removed them to an airy shelf. When the leaves are nearly decayed, we place them in very shallow baskets, and allow as much air as practicable to be between each root to harden them, turning them every two or three days. By this treatment, and rubbing off any portion of mould attached to the bottom and sides, they are in a fit state to be placed for the summer in a dry room; and, by a little occasional attention, the rough and outside part will, by a gentle side-pressure of the thumb, be effectually removed, and exhibit the appearance of the bulb clean, smooth, and in good condition. This operation is best performed in the end of August; and at that time remove the remains of such parts of the root of the former year as may not have dropped off previously to this time. It is hardly necessary to state that any bulb in an unsound state, either from appearance or decay, or from having been injured in taking up, should not be put with those intended for future planting.—*The Gardener.*

Propagating Carnations.

As the process of layering, though simple, may not be known to all who are desirous of cultivating these plants, we give an outline of the mode of operation. Provide first a quantity of small hooked twigs, about three inches long, for pegging the layers down in the earth. Select the outward, strongest and lowest roots that are round the plant, trim off a few of the outer leaves, and shorten with the knife the top ones, then; and then applying it at a joint about the middle of the under side of the shoot, cut about half through in a slanting direction, making an upward slit towards the next joint, near an inch in extent. Now loosen the earth, make a small oblong cavity one or two inches deep, put a little fresh light earth therein, lay the stem part, where the slit is made, into the earth, keeping the cut part open, and the head of the layer upright one or two inches out of the earth, and in that position peg down the layer with one of the hooked twigs, and cover the inserted part to the depth of one inch with some fresh earth, pressing it gently down. In this manner proceed to lay all the proper shoots of each plant. Keep the earth a little tilled round the plant to retain longer the water that may be applied. Give immediately a moderate watering with a rose watering-pot, and in dry weather give light waterings every evening. Choose a cloudy day for the above operation. In about two months they will be well rooted.—*Farm and Garden.*

FOR GLASS CULTIVATION, Souvenir d'un Am. with its broad blushing petals and lustrous leaves and Marchal Niel, in its golden beauty, symmetrical form, and exquisite fragrance, are specially and invariably beautiful.—*Rev. S. K. Holt.*

The Dairy.

Sour-fodder Making.

A juicy, palatable and nutritious article of food for dairy cattle is a necessity at all seasons of the year; and during the spring, summer and autumn months this is provided for by pasturing on clover, or soiling with the various grasses, oats and peas, corn, &c. In winter the only milk-producing fodder we have to fall back upon are the various kinds of roots and preserved grasses. Every farmer, however, knows the difficulty of preserving roots in winter; what large quantities of them decay from various causes, and are rendered totally unfit for cattle food. To avoid this, beets and other roots are sometimes cured with chaff into what is termed sour-fodder. This method has been successfully pursued in Hungary for some years, the curing process, as described in the *American Agriculturist*, being as follows:—

An ordinary ditch is first dug in a dry place. When the beets are taken up in the usual manner, they are hauled in, washed, and cut with a machine. Then the pit may be divided into sections, for instance, for a length of ten rods into five sections, and by this division the labor is very much facilitated, because the first section can be covered with earth, while the second section is being filled. When a certain number of beets are cut, a layer of chaff is first laid upon the ground of the first section; upon this chaff is placed a layer of cut beets, in the proportion of one pound of chaff to ten pounds of cut beets; the two layers are then thoroughly mixed with a fork; after having done so, a layer of chaff and beets is again laid down, and again well mixed. This is repeated until the mixture reaches the top of the ditch, then it must be built upward from six to nine feet above the level of the ground. On the top of the stack are laid a few sheaves of rye-straw, to prevent the fodder being mixed with earth; then the first section is covered with earth, commencing the covering at first on the top of the stack. When the first section is finished, the second and all following sections are managed in the same manner as above described; when the whole ditch is filled, we take care that the stack is covered on every side with 1 1/2 to 2 feet of earth. This sour-fodder, mixed with corn-meal or other feed, will be relished by the daintiest beast.

Commenting on the quality of the roots cured by the above process, the editor of the *Agriculturist* remarks:—

Although the fodder above described is called sour-fodder, yet it is not on that account objectionable; the fermentation which the feed undergoes produces some ammonia, so that really the mixture is to some extent alkaline, and this corrects any ill effects which might be supposed liable to arise from the acidity of the food. By the same process brewers' grains may be preserved for use during the winter, alone or with cut straw.

Butter Making in France.

Normandy and Bretagne are the two butter-producing regions of France, and their exportations are almost wholly made to England. The former is famed for its Isigny butter, the latter for that called Prevalage, and which is prepared within a circuit of twenty miles around the town of Rennes, though originally taking its name from a small farm. There is nothing peculiar in the race of black cattle of Bretagne; the cows are of a mixed breed and small, but their milk is peculiarly better. The forage is nutritive, and plentiful without being abundant, in summer it consists of clover, vetches and after-math pasture; in autumn the same, with cabbages, a bran mash being given to correct the flavor the cabbage imparts to the milk; in winter, beets, and oat-straw, with bran, crushed furze and white carrots. Dairies are commencing only to be known in Brittany; the milk is conserved in earthen vessels which are placed in the middle of the kitchen, protected according to the season. The milk when suitably soured is first skimmed, the cream placed in the churn, and as much of the milk added as is deemed desirable. The churn is in earthenware, with the ordinary dash, worked either by a pole as a lever from a beam of the roof, with a stone at the other end, or with the hand directly. In winter a flat bottle of hot water is placed in the churn, in summer

a cold one. Twelve quarts of milk yield one pound of butter, the preparation of which has this peculiarity, that in its manipulation no water is used, no washing takes place, which is said to preserve its delicate, aromatic and "nutty" flavor. But this mechanical kneading is very far from removing the milk and the particles of caseine, and wholesale buyers deduct 10 per cent. from the weight in consequence, having to wash it before exporting it. Isigny butter, which is prepared by washing, keeps better and has a superior flavor to that of Prevalage, after it has been treated with water. In Normandy the barrel churn is universally employed, and the butter is washed in the churn itself. In other parts of Bretagne the butter, though not washed, is salted immediately after being kneaded—never with the hands, from two to four ounces of salt per lb., according to the period of preservation required. After the earthen vessels have been well scalded and cooled, a few spoonfuls of the old and soured milk, forming a kind of leaven, are rubbed against the side of the vessel; the fresh milk is poured in, when the "turning" quickly ensues, and the cream is found to rise more rapidly. The butter is made up in one or two pounds, placed in little black earthen pots, covered with linen and corded, and so arrives in the Paris and London markets for immediate consumption. It is also formed into blocks in the shape and as large as a beehive, or packed in shallow wicker baskets a yard long. After the cream has been poured into the churn along with some of the milk, the portion of the milk retained, after being cut in cross blocks by a wooden knife, is with its vessel placed beside a slow fire, in a little time the whey is run off, and to the cooked curd is added the milk fresh from the churn after the butter has been removed; this with rye or buckwheat cakes forms the uniform dietary for the farm servants. It is women who milk the cows, in summer and winter for the first time, at three and five o'clock respectively; the second milking takes place at noon invariably.—*Can. American Farmer*.

Shipping Green Cheese.

Mr. L. B. Arnold, secretary of the American Dairy-men's Association, writes to the N. Y. Butter and Cheese Exchange as follows, and his views are worthy of the careful consideration of dairymen:—

I see by your reports that the market is being crowded with green cheese, and prices are falling in consequence. Would it not be well to urge more pointedly the propriety of retaining cheese longer in the curing rooms—until it is cured? This crowding forward green cheese works a double loss. Cheese never cures so well in boxes as in the factory. It makes inferior cheese, and this injures consumption, for the consumption of cheese varies with the quality rather than the price. Give people fine cheese and they eat freely; the better the goods the more they eat. When poor it is used sparingly.

I was in the southern part of the state last month and saw cheese selling from 14 to 10 and 8, and even 6 days from the hoop, instead of 30 days as usual by its inferiority from curing in boxes so much green cheese retards consumption to an extent that makes it drag in the market, and prices fall as a matter of course. If this green stuff could be kept back until it is cured into more palatable goods it would be consumed as fast as made, and the demand would be kept strong and active.

It strikes me that if this necessity were more earnestly urged in your reports, which are copied by all the papers that circulate in the cheese districts, it would materially check the exceedingly green shipments, to the relief of the market, the improvement of quality, and an improvement of price and reputation.

Feeding Sour Whey.

Several correspondents have recently asked concerning the value of sour whey as food for milch cows, and the effect of the same upon the product made from the milk. We believe sour whey is altogether unfit to feed. It is not merely worthless, it is worse than worthless. By judicious mingling with other food it may be restrained from exercising a noticeably bad effect upon the animal, but it introduces into the system an evil element, which passes directly into the circulation, deposits itself in the milk, and induces retrofractive conditions in the product. It is fatal to a good flavor in the cheese, and makes what is called an open article. With good, sweet whey a different result might be expected, but whey from the factories, drawn from a whey vat which is a stench and a pestilence to the neigh-

borhood, and from whose corrupt recesses there can come no good thing—if this matter be fed to cows, it can have none other than an evil effect and that continually. Such patrons are ridiculously strenuous about obtaining their full share from the whey vat, so much so that the maker has to pump in water "to make it go round." The beauty of this system is that the more water the patron gets the less evil he draws home. Everything about a cow should be clean, sweet and wholesome if the best article is to be made from her milk. The result cannot be obtained if the seething, stinking whey is introduced into her diet. The old wisdom of tigs from thistles holds good in this matter as in other agricultural operations.—*Utica Herald*.

An Interesting Specimen.

Mr. William M. Gates, of Whitesboro, recently brought us a small piece of animal tissue which was caught upon the strainer at the Whitesboro factory. It is about three-quarters of an inch in length, and as thick as a piece of common twine. It is of a bright red color, and when first glanced at looks like a little piece of ordinary flesh. We discovered nothing remarkable about it until we subjected it to a microscopic examination. The first thing noticed was an inflamed and congested condition of the tissue and a general indication of unhealthy formation. Our first impression was that it was a piece of diseased flesh, and nothing more. Upon striking another part of the shred, however, a fine grained substance was perceived woven in and out of the flesh. Getting a clear definition of this shining substance, it was seen to be a fine strip or scraping of a white metal, like tin, running in and out of the flesh. The scraping was grooved lengthwise and ragged upon the edges; just as would be obtained by drawing the point of a knife sidewise across a tin surface. Thinking at first that the tin might be merely adhering to the flesh, we examined it closely, and perceived that the metal was really woven in with the tissue which had closed over it at some points.

The flesh was evidently from a sore, and the metal was pressed into the flesh in a way which might have induced the sore. After the flesh had sufficiently degenerated, a part came away and brought the tin with it. This seems to us the way in which the flesh came into the milk. But how the tin came into the flesh is a question which cannot be satisfactorily decided. It might have been forced there in many ways. But there it was, and there it has been for some time, apparently causing the sore from which it finally escaped, bringing flesh with it. There seems in the matter apart from the curiosity of the specimen, an illustration of the many ways in which our animals may be afflicted.

SEVERAL THICKNESSES of wet cloth wrapped about a pitcher will, by the cold produced during evaporation, keep the water contained in the pitcher in a tolerable drinkable condition during warm weather. A common flower pot, inverted over a plate of butter, and kept covered in the same way with wet cloths, will keep butter in that state of solidity which is so essential to its attractiveness.

HARD ON THE CITIES.—One of our contemporaries, in commenting on the high prices sometimes paid for butter in the cities, is disposed to consider them as no indication of the value of the butter, because the people in the cities see so little really prime butter, but they are not qualified to judge on so fine a point. Perhaps there may be some truth in this, but we are inclined to regard the city people as pretty good judges on this point. There is no class of people in the world so particular as to what they eat as the residents of cities, and no mode of life so well calculated to create and nourish fine distinctions in the matter of flavor. Let anyone take a plate and make the rounds of the city markets, and he will travel far, as a general rule, before he finds butter as rank as that which can be found at almost every country store; and the commodity which the merchant keeps for sale is a pretty fair indication, the world over, of what his customers demand. So far from the city people lacking in a discriminating taste in the matter of butter, we have sometimes thought them over nice in this particular, displaying altogether too much taste. Let no one delude himself with the idea that he can make an inferior article of butter, and succeed in working it off on city people under the impression that it is a choice article.—*National Live Stock Reporter*.

Poultry Yard.

Poultry Notes—No. 16.

Fancy Points—Their Benefit and Utility.

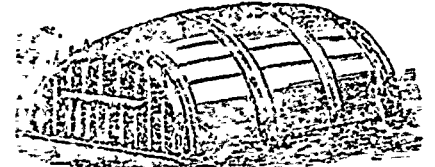
In selecting birds for exhibition it is very important to choose none but the best; but to be able to select the best only, involves a practical knowledge of all the fancy points of a fowl. But what are the fancy points, and of what benefit are they? In 1872 the New York State Poultry Society requested the Hon. J. Staunton Gould to deliver an address on poultry, and in speaking of fancy points, this gentleman said: "I must say that in my judgment the rules laid down in our 'points of excellence' are not worth the paper on which they are written as guides to the selection of good fowls. They tell us absolutely nothing about the physiological condition of the birds, nothing about their capacity for laying on flesh, nothing about their capacity for laying eggs, nothing about their hardihood or endurance—nothing, in short, that it is most desirable we should know." Mr. Gould then went on to say, "In the rules for judging Brahmas, I am told that the beak 'must be well curved.' I would respectfully ask, why? If I have two Brahmas, A and B—A having a well-curved beak, and B having a beak which approaches more nearly to a straight line—is the curved beak any evidence that A will lay on more flesh for a given amount of food, or lay more eggs, or is in any other respect a better hen than B? I read further in the same standard of excellence that the Brahma must have a pea comb. But why, I ask, in the name of common sense, is it necessary that a Brahma should have a pea comb? If it is true that a pea comb is no indication of the excellence of a fowl, or of its profitableness, or of its purity of blood, and if it does not minister to the æsthetic gratification of its owner, is it not simple nonsense to include it among the points of excellence of the breed?" Mr. Wright, in his Poultry Book, undertakes to give a reply to Mr. Staunton Gould's objections to arbitrary standards in fancy points, which so completely meets the point under discussion, that we have much pleasure in quoting it, with a few remarks on other points also made in the same address. "The speaker," says Mr. Wright, "then further urges that the value of size in any breed is much exaggerated. It is not contended, he says, by any one that a hen which weighs a pound or two more than another will necessarily lay a greater number or a greater weight of eggs than a smaller one; all the superiority, therefore, is at the utmost increased by the price that the extra pound will sell for the market. Suppose it turns out, as the result of experiment, that this extra pound costs more to put on than the market price, surely then it cannot be considered that this extra weight is a merit; it must rather be looked upon as a demerit. Passing on then to what he considered should be the points to be encouraged, Mr. Gould advocates in the first place the seeking of 'the greatest weight in the smallest relative compass;' and in the second those breeds in which the greatest 'bulk is concentrated round the most valuable parts.' It is impossible to put such questions more forcibly and fairly than they have been put by this able speaker, and we devote this short chapter to their answer, because they are constantly asked by parties who only have a partial acquaintance with the subject or with the fowls themselves, and the answer has a very important bearing upon the question of poultry cultivation considered as a whole. When, then, Mr. Gould complains that the arbitrary standards 'tell us nothing about the physiological condition of the birds, nothing about their capacity for laying on flesh, nothing about their capacity for laying eggs, nothing about their powers of digestion and assimilation, nothing about their hardihood,' he asks why

they are not judged according to these points. The first answer which occurs after a little thought is the very simple one that it cannot be done. Such matters must of necessity depend chiefly upon testimony and hence are inadmissible in a show. We could not see in an exhibition pen which was the best layer of two competing hens; but color, or shape, or size we can see, and therefore by these we determine, since they are the only elements which can bring fanciers into visible competition. To go by evidence would never be tolerated, and would lead to many evils which do not need to be here specified. We need something which can be brought actually before our eyes. And even with regard to shape, the feathers in which a bird is clothed prevent such nice discrimination as is possible in the case of a short-horn bull. The actual outline of the body cannot be seen, and to decide by casual feeling would be simply impossible in the time given for judging large numbers of poultry pens. So with regard to size Mr. Gould's objection is plausible, but will not stand the test of consideration. When a man buys a ram at a high price, because both flesh and fleece are better than the common breeds, the extra flesh and fleece will most certainly be worth only an infinitesimal fraction of the price paid; but the animal stamps these features on a progeny, and in this way his cost is well repaid. So in poultry, it may cost five shillings to put on a fowl an extra pound, which may only sell for ninepence in the market. But in the next generation the extra pound will cost far less to produce; and so in a little while a race is established, and this standard of size is by the same means maintained and is a permanent benefit; for even were it the case that an extra pound which sells for ninepence cost ninepence in food to produce it, there would still be a gain, from the fewer number of fowls to feed, and hence less cost of labor to produce a given weight of meat. But this is not the case, for it is always found that large breeds are less costly to produce per pound than small, besides they weigh at so much earlier an age, and hence give a quicker return for the capital invested in them. We might say, indeed, that the bare fact of our possessing large breeds at all is an evidence of the value of this cultivation of size, being simply the result of that selection which arouses Mr. Gould's doubts as to its utility. Lastly, Mr. Gould's own cardinal principles will not stand when practically applied. The breed which combines the greatest weight in smallest relative compass is unquestionably the Game; and that which has the greatest proportionate weight in the choicest parts is probably the Malay, which in relative weight of the breast, merrythought, and wings together, exceeds any other fowl; but neither of these breeds in ordinary circumstances can be called profitable poultry. Mr. Gould in the same address admits the Brahma to be one of the most valuable breeds; yet by both these canons it would be excluded. There are, in fact, a dozen circumstances to be considered before the value of a breed is known. There are not only to be weighed its proportion of parts, but its laying, its hardiness, its domesticity, its precocity, and the comparative cost per pound to produce its carcass; and from these various causes almost every breed has some special value, for the sake of which it could ill be spared, and even when comparatively of little value in itself is often highly useful as a cross." Continuing still further his argument, Mr. Wright says, "We have thus shown how 'the knowledge, enthusiasm, and patient perseverance of the fancier are necessary to improve and maintain any breed in perfection for even the utilitarian.' But it may still be asked, If in the fancier's hands these breeds have lost some of even the original economic value they had, how then? The answer to this is also very simple, and consists in the fact that however much these qualities have diminished, they usually reappear in all their original perfection in the

first cross; and it is of course not yet breeders usually imply such like crosses, which are better for nearly all purposes, every practical end is still secured. Thus supposing a strain of Brahmas to have deteriorated in laying, and a strain of Houdans to have suffered in the same way through long breeding to merely fancy standards, and omitting to select the best layers, the chickens produced by crossing these two families will in almost every case reproduce the acuity in all its original perfection. This is a fact we have seen often, and it further establishes the truth demonstrated by Mr. Darwin on other evidence, that 'the very act of crossing gives an impulse to a reversion, as shown by the appearance of long lost characters,' and the destructive effect of which on his own well-known theory of development it is very strange that this eminent naturalist does not see." We will not offer an apology for quoting so fully from Mr. Wright, as he so clearly answers Mr. Gould's objections, and proves the usefulness of maintaining fancy points in a breed of fowls, that they are well worthy the perusal of all breeders and fanciers.

A Simple Chicken Coop.

"Being engaged in raising chickens," says a correspondent of the *Rural New Yorker*, "I found it necessary to make cheap coops to keep them in for a few weeks. I take an old barrel and tack every hoop on each side or a seam between the staves with an inch-wrought nail; after clinching the nails, I saw the hoops off on the seam. Then I spread the barrel open, as in the following figure, by cutting a board about 20 inches long for the back of the coop, and two small pieces to tack laths on for the front



part. The upper section of the back is fastened with leather hinges, so that I can open it at pleasure. Everybody has old barrels which are almost valueless, and the trouble and expense of making a coop of this description is so small it is not worth mentioning, while to buy the material and make a coop of the same size, would cost about \$1.

INFLUENCE OF THE COCK.—In the early part of May I removed all my Dorking hens from the male bird, and continued to put their eggs in the incubator. All eggs laid during the following nine days were good, and produced chicks. No egg was laid on the tenth day, and after that time they were all clear. After three weeks' separation I put two hens back in the run with the same cock. One egg laid twelve hours afterwards was clear, two laid thirty-six hours from the time the hens were put in the run were fertile, and the same with others laid since.—*Cor. Fancier's Gazette.*

A HINT FOR POULTRY EXHIBITORS.—An English poultry fancier at the late Crystal Palace show exhibited specimens which were of remarkable feather and brilliancy of color. The cause of his conspicuous success was simply feeding cayenne pepper, and causing his birds to moult in warm cages. The plan is accepted as a legal and proper one, for the reason that if, by ingenuity or accident, any means of improving the appearance and character of the birds by the use of food which acts upon the natural growth or secretions are discovered, the use is a ready allowed by existing rules, and does not come under the category of tricks, by which is meant the employment of outward applications or devices to change the natural appearance for a disguised and fictitious one.

Egg Inspection—The butter and Cheese Exchange of New York have provided for an Egg Inspection Committee, by whom egg inspectors are to be appointed. A charge of 75 cents per barrel is to be made for inspecting, and 25 cents for repacking eggs.

TO MAKE A NEST EGG, take an ordinary hen's egg, break a small hole in the small end, about three-eighths of an inch in diameter, extract the contents, and after it is thoroughly clean inside, fill it with powdered slacked lime, tamping it in order to make it contain as much as possible. After it is full, seal it up with plaster of Paris, and you have a nest egg which cannot be distinguished by the hen from the other eggs, and one which will not crack like other eggs; by being frozen.—*Scientific American.*

NEST IN AN OLD COAT POCKET—The following is another instance of the curious sites for nesting which women and their sometimes select, examples of which have lately been given. An old shooting coat has been hung up in a tree in a garden for the express purpose of frightening away the plundering birds, and it was subsequently discovered that an audacious pair of jays had built themelves a nest in one of the pockets. They were allowed to remain in possession, and their young brood first saw light from that civilized and aristocratic dwelling place.

GOOSE OR GANDER—I find the goose has always a feminine appearance, and the gander the opposite. Her head is smaller and her beak shorter; knot or forehead smaller and not so pointed; her neck is shorter and more delicate; the black streak on back of neck not so high; a pointed ring round head not so bright; her neck comes out of her body more abruptly, this occasioned by her having a larger breast than the gander, giving a square appearance to the body. The voice of the gander is keener and louder; coloring about head more brilliant; eyes keener and always on the look out. With such marks plain to view, any practical gooseman can readily distinguish one from the other.—*Cor. F. H. J.*

A HIGH PRICED ROOSTER—Two thousand dollars seems to be a pretty steep price to pay for a rooster, but such we are informed was the amount paid to Ira Bat-shelder of the Crawford House, for his black Spanish rooster, called Gen Castelar. The purchaser, Mr. Wm. G. Davis, civil engineer on the Portland and Ogdensburg Railroad, considers him the best game bird in this country—he being the only one hat-hed from a dozen of eggs brought from Mantanzas, Cuba. Various birds were made by different parties in this city to secure him one centleman in particular, now prominent in the lumber business, offering his entire interest in the largest mill on the line of the road.—*Portland Argus.*

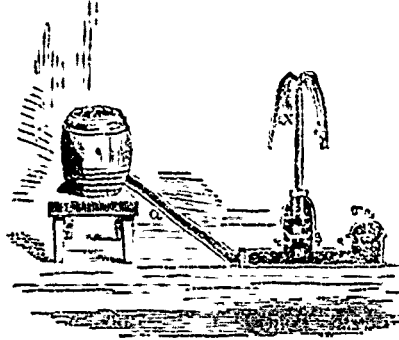
A SULPHUR BATH—A recent visitor to the celebrated stock ranch of E. W. Chapman, Merced county, thus describes, in the *Resources of California*, the manner in which the sheep are treated for the prevention of a disease extremely troublesome in the sheep-fold: The day we were there Mr Smith had the flock in the corral, and was engaged putting the sheep through a bath highly charged with sulphur and lime. There was a long narrow vat that contained the liquid which was heated to a certain temperature by the introduction of steam through the bottom of the vat. By a nice arrangement of fences, each sheep was forced to enter the vat at one end, and work its way through the liquid to the other end, where it passed out. This bathing process is required to be done twice a year as a preventive and cure for a skin disease called "scab."

MAX ADLER ON THE HEN LAW—Speaking of the Massachusetts law making it necessary that a "dozen eggs weigh one pound and a half," Max Adler says: "We approve of this. The hens have too long had their own way in this business of laying eggs, and they have constantly defrauded the public. It is high time this outrageous system was crushed, and we argue that the legislature of Massachusetts is going to do it. Three American citizens are to be imposed upon with impunity by delinquent and corrupt chickens, the government for which William Penn fought and John Hancock died is a disgrace in failure. Hereafter, Massachusetts hens will not have to lay two ounce eggs or enigrate. The pound will submit to their tyranny no longer. They have borne the yoke until it has become intolerable. They demand present prices for present eggs, a *quintuplum* and hence they demand a reform, and the Aeternum ration to draw up this chicken bill and *pallet* through the legislature.

Correspondence.

The Hydraulic Ram.

"A new subscriber" asks for information about the principles involved in "operating a Hydraulic Ram. We reply with pleasure. In the accompanying cut a pipe (a) is laid from the barrel to the ram, and a valve (b) beyond it, which is forced down and kept open by the weight (c). The water from the pipe striking against the underside of the valve (c), closes it. The course of the water is stopped, but the column nearest the barrel still presses forward, and



as it cannot escape through (d), it opens the valve (b) in the ram, and rushes up the pipe (e). The momentum ceases, and (c) again opens, when the same action is repeated. So rapid is the action of the mechanism that the valve (b) is in continual vibration, and an incessant stream of water is produced. See pages 12 and 307 of the CANADA FARMER of last year.

Dynamite—Old Straw.

(To the Editor of the CANADA FARMER.)

SIR—In any of the dynamite cartridges which you recently described in the CANADA FARMER, I procured in Canada? I am very anxious to try them on some large pine stumps that encumber my fields.

I have a large stock of old straw in the barn yard that must be cleared away to make room for the coming crop. I propose spreading it on the field immediately after sowing. One of my fields is a flat of hard, stiff white clay, that in dry weather holds little moisture the other is a coarse sand-loam. Would you approve or disapprove of the using the straw or do you think it would be better not to put it on the land until the first snow falls?—I am, &c., D. H.

[Dynamite cartridges, with all necessary instructions as to their use, may be obtained on application to Messrs. Young & Miller, of this city, whose advertisement appears in another column.]

A thin, evenly spread mat of straw applied in the fall will be found an excellent winter protection to wheat sown on the tops of hills, or in other exposed situations. Henry McAtee, farm superintendent of the University of Wisconsin, in a communication to the *Western Farmer* on the subject says:—

The variable character of our winters prevents uniform results with most experiments in winter-anching wheat fields, but the average benefit is recorded in all places exposed to severe winds, that it should be adopted as a uniform practice in such places. There are two remedies for the great drawback known as winter-killing: under-drawing anchoring. The former is the cure on low, wet spots he later on exposed knolls. Some years ago, when the Mediterranean was the variety of wheat most sown, we directed a tenant farmer to spread a thin covering of the surplus straw over a field of wheat having one uncovered strip by way of experiment and comparison. But he was negligent, and spread out two strips with straw. Towards the early part of the winter, after the ground had frozen hard, and more snow had fallen. The winter proved severe, and with little snow; and the result with this field was that the matted surface retarded the following summer at the rate of about twenty to thirty bushels per acre; the rest of the field, fully exposed, was not

with harvesting. This, of course, was an unusual if extreme case; but the frequent liability to severe injury from full exposure, which would be prevented by a covering enough to protect the bare soil from the sharp cutting winds, renders it wise to secure the crop, when practicable, by a suitable covering, even with varieties of grain less likely to be water-killed than the old Mediterranean.]

What Varieties come true from Seed?

(To the Editor of the CANADA FARMER.)

SIR—I notice in the CANADA FARMER of March 1874, an interesting article by Mr. A. Fisher of Guilford, Oxford, on "Our winter wild birds" in which he gives an account of a combat between a red squirrel and a blue jay, the object of the former being to get the young jays to eat; and he mentions that he has never known a similar instance. I can assure him with one such, and is the only one I have ever known. When I was one 17 or 18 years old (now 23 years ago) a pair of common red-headed woodpeckers made a nest in a blow with a stump, perhaps 25 feet from the ground, and brought out the young birds. One Sunday morning I was watching the hen bird feeding her nestlings with grubs, &c., when I saw a red squirrel make an attempt to go into the hole in the top by which the old bird used to go in and out. In this position what he wanted there, but the woodpecker, it seems, was wiser in that particular than I. She opposed his entrance as long as she could, but he took and caws, which, as she was inside the hole, she could not do. He had considerably the advantage, as some little time, but at last master squirrel got in in spite of all she could do. He soon made his appearance again outside the stump and ran to the top of it, with a nicely full-fledged young woodpecker in his mouth, and very quietly sat there and took it up, and went back for another. I don't remember whether or not he ate all the young ones at all, but I know he finished the whole brood eventually, and the old birds deserted the nest and stump. The circumstance took place on a farm then owned by my father on the Governor's Road, close to the present site of the town of Guilford, and used by Mr. Saunders as a fruit farm. By the bye, on the 21st of the same month I see an article by Mr. Wm. Henderson on "What varieties come true from seed" in which he states that "any cutting from root or branch, whether rooted itself or engrafted on another stock, (except in rare cases of sports), will be identical with that of the original form from which it was taken." This, I believe, is always true if the stock is grafted on to a stock it will grow on; but like an apple seed or any grafted tree you like, and make a cutting of it and raise it by sticking it in the ground, or, if you like, bend down a branch of a grafted apple and layer it, and it will not come true to the parent, but will vary from the parent tree as much as if you had sown an apple seed.—I am, &c., G. W. BUCKE.

Wilkesport, July 27th, 1874.

Dynamite among Stumps.

(To the Editor of the CANADA FARMER.)

SIR—in regard to dynamite, Mr. John Scott, of the Glasgow Canadian Land and Trust Company, now at Levesville (in the eastern townships), who witnessed some of the experiments made with this powerful explosive when in Scotland, and who has been using some of it since his return to Canada, reports that he is succeeding well with dynamite in blasting stumps. His system is: If the root be in firm soil, he places the charge below it; if the root be found, then he bores down the centre to within about a foot of the earth at the bottom of stump, and tamps with water. One cartridge will do in this case, and Mr. Young states that it blows the stumps to shivers, and loosens the roots so completely that they are easily taken out.—We are, &c., YOUNG & MILLER.

Toronto, 21th July, 1874.

INQUIRE asks whether the soil and climate of Prince Edward Island is adapted for gardening, perhaps some of our correspondents in that quarter can kindly supply the information required.

T. L. VICTORIA, BRITISH COLUMBIA.—The "Food-Printer" described and illustrated on page 325 of the CANADA FARMER for 1873, is manufactured by P. P. Mast, Springfield, Mass., and may be obtained either there or from Mr. John Watson, Agr. Agricultural Works, Waterloo, Ont. They cost from \$50 upwards, according to size.

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The Canada Farmer.

TORONTO, CANADA, AUGUST 15, 1874.

Exhibition Judges.

Possibly our country is not yet old enough, nor our exhibitors sufficiently "adept" to practise many of the eccentricities recently brought to light in connection with agricultural exhibitions in Britain. We have all heard or read of Barnum's "woolly horse," and can understand how, until the deception was revealed, that singular animal attracted the attention of thousands; but we venture to assert that it would have been a long time ere it "entered into the heart" of even the great showman himself to attempt pulling the wool over the eyes of experienced judges, and that too to the extent of parading glass-eyed and wooden-legged animals in the very show-ring. A recent writer, after dwelling with considerable force on the extent to which such practices have been carried on under the apparent sanction of the Royal Agricultural Society of England, the Highland Society of Scotland, and the Bath and West of England Society, concludes a paragraph with this remark: "It may be in the recollection of some of my readers that at one show of the Ayrshire Agricultural Association, a prize bull was found to have false horns.

It is well-known that a "well-sprung ribbed" animal constitutes a beauty in the estimation of cattle-fanciers. Wherever such a configuration is found it undoubtedly adds much to the beauty of symmetry, but in certain instances wherein nature had either forgotten or refused to grant the needed decoration, 'jockeys' have been found equal to the occasion. "On the morning of the judging day of a Highland Society's Show," says the writer referred to, "I was astonished to see three cattlemen busily engaged in pouring successive cans of water down the voraciously upraised gullet of an Ayrshire cow; but my astonishment was suddenly changed into indignation when I was informed that the brutal operation was intended to give the poor beast's ribs a better spring. At Penicuik, on one occasion, it was found that an enterprising Scotchman had most successfully painted the noses of his black-faced sheep, and the second prize would have been carried off by him had not an intending but curious purchaser got himself, while examining the sheep, made as black as the acc of spades." The partiality of judges to the stock of

itled and royal exhibitors is commented upon with great freedom, and the guilty ones receive castigation at the hands of one who evidently knows how to apply the birch. Perhaps it may not be too much to say that the tendency of human nature in this respect is far more widely spread, although we question much whether in any other place under the sun it would be exhibited to such an extent as follows: "At an International Exhibition, held at Hamburg in 1863, I remember the judges did the judging with the catalogues in their hands, one of the results being that Her Majesty the Queen got a second prize for a mare with only three legs—I mean three good legs—still more recently, at Birmingham, Professor Gairdner was disqualified (from the evidence of their teeth), for being of different ages, a litter of pigs born on the same morning, and of the same mother, while at the Horse Show of 1869, a confirmed roarer, namely, Whitley, a son of Barton, took the first prize in the thorough-bred stallion class, and the wonderful decision was given in the face of the fact that there were eleven other thorough-bred stallions competing, among them being such good horses as Dalesman, Broomielaw, and Student. Mr. Taylor, the special commissioner of the *Sportsman*, drew attention to the verdict, and next day Whitley was disqualified, and Dalesman put in his place."

There is a certain peculiarity, however, that is characteristic of many of our cattle raisers and breeders, which even in this country is carried much too far, and which ought to be condemned as a pure deception. We allude to the wholesale use of oil cake. There is no credit in putting on fat with it; in fact, it is less than creditable, for not unfrequently the beast is clothed with fat solely for the purpose of covering its defects, and thus the hot house animal carries off the premium, while its neighbor, a naturally fed and in some cases a much more symmetrical animal, is overlooked altogether. The true test of a good breeding animal is best ascertained by giving it natural food; indeed, it is the cheapest way of doing the oil-cake and other artificial treatment being confined almost exclusively to those who look for the name rather than the riches. The system is positively unfair, as it affords no true test of a good animal.

Machine Accidents.

Happily, through the ever-increasing perfection of machinery, accidents are now becoming the exception rather than the rule. Still, however, we hear of their happening, and, strange to say, do so often under circumstances that rather excite anger at the sufferer for his carelessness than pity for his misfortune. It has been well said that "To be careful is good advice," but the carefulness should consist rather in habitually keeping out of the positions in which accidents most frequently occur, than by getting into such positions and looking out afterwards. We read of more accidents happening in connection with reapers and mowers than with any other machines. Still it happens these accidents do occur; and in order to their prevention we would suggest to our manufacturers one other improvement on their reapers, viz.: such an apparatus attached to or near the seat as may retain the driver, or at all events prevent him from falling forward or backward should his machine jostle against an obstruction. It is mainly in this way that injuries happen. Now, could there not be some strap, or roll, or band, or something else of that sort adjusted as we have suggested? Sometimes accidents occur whilst the driver is away from his seat altogether, but in these cases common sense alone suggests a remedy. Be careful. Never stand before the sickles, even when the machine is stopped; and keep clear of the gearing, so that a sudden start may not result in having your clothing or any portion of your person entangled. On accidents resulting to little children we have but one remark to make—keep them either entirely out of the field, or under strict surveillance whilst in it.

THE SUI OF CROJ.

We have seen the suggestion in print, "Borrow the money you require for immediate use, and warehouse as much of your grain as possible." This is a very singular advice, and indicates on the part of the writer an equally singular notion of economy. To the wealthy farmer it were needless advice, for he has already money sufficient for immediate use, therefore it must refer to the average, and especially to the poor farmer. In other words, it means simply this: "Run a double instead of a single risk." By borrowing money you must pay a certain interest; and by storing away your crop you run the risk of a fall as well as a rise. The idea is preposterous. Farmers who can afford to keep their crops stowed away for a time in hopes of better prices, and indeed all farmers, may easily tell by a consideration of the respective demand; the old stock on hand at home and abroad when the new crop is ready for market; the quantity of new crop as compared with former years—all which information they may get by reading a good newspaper—the wisdom or folly of preserving their crop; and act accordingly. The other method is a vicious speculation. It might possibly happen that the farmer following it would win by betting on the price of his products six months hence, and borrowing the money to bet with; but on the other hand he might not, but lose the money margin he had put up.

The English Market for Wheat.

The raisers of this year's wheat crop, which it is conceded will be unusually large, will find satisfactory tidings of the English market in the following from the *Mark Lane Express*, an authority upon such matters. The *Express* says:—

We have very little native wheat on hand, if we may judge by the supplies brought to market from week to week; and, in point of fact, most of the large millers can only support their business by buying foreign wheat, the home supply being totally inadequate for their requirements. In the meantime our exports in the five months of 1874 have amounted, in wheat and flour, to 60,863 quarters, being nearly double what they were in the corresponding months of 1873, which still further decreases the deficiency. Our stock of foreign wheat is by no means overwhelming, and we must have a continuous importation the next two months to meet the consumption. We are likely also to have a demand for both wheat and flour from France, that country being in much the same condition as England in respect to the home supply. They have, in fact, purchased on this market all the season, and as lately as last week a cargo of flour was taken at Liverpool on French account, and repurchased by the French millers for their own home trade, the water of their rivers being very short. Unless, indeed, the importations of the next two months, both for France and the United Kingdom, equal the ratio which has already taken place, there will be an outcry for wheat such as we have not seen for many years. Fortunately for us, not only America and Russia are growing wheat expressly for the English market, but every wheat-growing country in the world, not excluding the antipodean countries themselves, is now prepared to supply us whenever the price is high enough to be remunerative.

With regard to the rest of the season ending the 31st of August, we shall still require importations to the amount of at least two million quarters, and very probably may still calculate upon large orders from France, which, like ourselves, may during the interval be unprovided with a sufficient quantity to keep off "short commons" if importations cease or get smaller.

J. S., Walkerton.—The volumes of the CANADA FARMER inquired for can be procured at this office.

H. U., Guelph.—Apply to Mr. Hugh C. Thompson, Secretary Agricultural and Arts Association, Toronto.

Mr. JOHN R. CRAIG will please accept of our thanks for copies of Bedford newspapers, containing reports of the Royal Agricultural Society's Show.

The Grasshopper Pest in Manitoba.

Their Past Ravages.

Grasshoppers first appeared in Red River towards the end of July, 1818, six years after the commencement of the settlement. They covered the settlement belt, but did not utterly destroy the wheat crop, it being nearly ripe at the time. Barley and other crops were swept away. They deposited their eggs and disappeared, and the following spring the crop of young grasshoppers was immense. These departed before depositing their eggs, but devoured all vegetation on their route, thus destroying all the crops of 1819. Great numbers came in during the season of 1819 and deposited their eggs, so that in 1820 the crops were again all destroyed. Thus for three successive years were the crops in this country destroyed by these pests. They then disappeared for thirty-six successive years, the next visitation being in 1857, when they visited the Assiniboine settlement, doing but little injury beyond depositing their eggs. The following season their progeny destroyed all the crops within their reach. In 1864 they again appeared in considerable numbers, but did little injury to the wheat crop. The following year the young grasshoppers partially destroyed the crops, leaving many districts entirely untouched. The largest swarm ever known came in August, 1867, but the crops were so far advanced that season that they did but little injury. Their eggs produced such immense swarms the following spring that they destroyed everything that had been sown throughout the settlement, and famine ensued. In 1869 they again visited the country, but too late to do much harm. The season following, however, they destroyed most of the growing crops. In 1872 immense hordes of these winged pests again visited a part of the country about the beginning of August. The country west of Headingly escaped, and generally the wheat was not much injured, but they played sad havoc with the gardens. Nothing was sown the following spring throughout the infested district, but throughout the western settlements a large crop was grown and saved.

Some of their Ravages this Year.

The following particulars of the destruction of crops by the grasshoppers thus far the present year will be found interesting:—

THE SOUTH.—From West Lynne (Pembina) northward as far as Scratching River the oats and barley have been entirely destroyed, and the wheat partially.

PALESTINE.—The latest reports from this settlement confirm former observations. The settlement is laid waste.

MANITOBA LAKE.—The shores of this lake are strewn three feet thick in many places with dead grasshoppers, the wind having driven them into the lake, where they were drowned and cast ashore.

THE POYNE SETTLEMENT.—They are very thick here, and have completely destroyed the oats and barley and about half ruined the wheat.

PORTAGE LA PRAIRIE.—From Poplar Point to the Portage the fields are swarming with grasshoppers, which have devoured the crops. Scarcely anything has escaped.

RAT CREEK.—In this neighborhood it is reported that the crops of Kenneth McKenzie, Hugh Grant, and others are being destroyed, and that the former had commenced cutting his oats and barley for fodder rather than let the pests take 'em.

ROCKWOOD.—The crops in this settlement have suffered severely. Oats and barley completely destroyed and wheat badly injured.

WOODLAND.—Most of the settlers in this neighborhood are entirely cleaned out.

COUNTY OF PROVENCHER.—All the crops along the Red River, from Pembina to Stinking River, have been eaten up, except that in some instances portions of the wheat and potatoes have escaped.

WINNIPEG.—The gardens in this city, and the oats and barley in the neighborhood are partially destroyed. During the evenings, at the going down of the sun, they seek the board fences and sides of houses in such numbers that in many cases it is im-

possible to distinguish the color of the houses, or the material of which they are built.

How they are to be Destroyed

Many people derive much comfort and encouragement from the discovery that nearly all the grasshoppers are infested with small parasites of a red color. Those best posted upon such matters assert that these parasites are deposited with the eggs, and that they destroy them. It is further asserted that the eggs being deposited so early in the season all that escape the insect will hatch this season. It is to be hoped this theory will prove of practical value.

Newfoundland.

The country around St. George's Bay possesses fine agricultural and lumbering advantages, as well as a large mineral area which only awaits the hand of enterprise to open it up and introduce a population. Mr. Alexander Murray, who is at present making a geological survey of the Island, has issued a report, upon which a correspondent of the *Globe* remarks as follows:—

Much has been written about St. George's Bay region, and your correspondent, in his communications to the press, has been charged with coloring too highly regarding it; but now that such an accurate observer as Mr. Murray has carefully gone over the ground, all we can say is that the land has not been told. What shall we say of a country in which the soil is deep and fertile, the timber of the most quality and abundant, the coal fields considerable, lead and iron found and indications unmistakable of platinum, and of salt in springs and solid form, to say nothing of unlimited quantities of gypsum of the best description? This is what Mr. Murray's report tells us regarding St. George's Bay, and yet this fine territory has about 1,000 inhabitants scattered round its shores, its valleys are still a primeval wilderness, and those who are engaged in farming have not yet reached the length of possessing a plough or wheelbarrow. I may add that its fisheries alone would support a large population, the herring fishery being of the most valuable description. Mr. Murray estimates the whole region as containing about 1,824 square statute miles. Speaking of the south-east side of St. George's Bay, Mr. Murray says, "The whole country between the coast and the Long Range Mountains is of a flat or undulatory character, densely covered with forest trees, consisting of white and yellow birch, spruce and balsam fir, poplar and tamarack or birch. There is, however, little or no pine. Much of the timber of this plateau is very large. Trees of yellow and white birch are frequently met with and particularly on the river flats, having a diameter of three feet and even more, many of which are tall and straight, resembling the hardwood forests of Canada. Spruce, balsams, poplars, and tamaracks also reach a maximum size, and seem to be of excellent quality. The ground is often covered densely by a creeping bush, a species of yew, generally known as ground hemlock in Canada, where it abounds, all amply testifying to the excellence of the soil on which they grow."

One Satisfied Farmer.

Men who change their business at middle age frequently do not succeed well, but there are many instances of men who have exchanged a mercantile or professional life for that of a farmer, and have succeeded well. The *New England Farmer* publishes a communication from a farmer near Buffalo, N. Y., who began farming when over forty years of age, with little money—perhaps \$500—and under some unfavorable circumstances. He has had some advantages and some disadvantages. He was able, recently, to fit out two sons with farms, stock, etc., worth at least \$75,000, and as we understand him, retains a good farm for himself. Some writer having proposed a bet, at large odds, that a satisfied farmer could not be found, this old gentleman, now over 80 years of age, proposed taking the bet.

THE GREAT CENTRAL FAIR will be held this year on the Crystal Palace grounds in the city of Hamilton, commencing on Tuesday the 6th, and closing on Friday the 9th September. Premiums to the amount of \$8,000 will be awarded. See advertisement.

New York State Sheep Show.

The exhibition held by the New York State Sheep Breeders' Association at Canandaigua recently, was in some respects a very remarkable one. Nine years had elapsed since the last exhibition of the kind, and the present occasion afforded unusual facilities for noticing the improvements that have been made in that time. The attendance of Merino breeders with their sheep was very good, and from the various parts of the state in which the fine wools are kept for breeding purposes. But very few long or middle-wooled sheep were shown—three Cotswolds and a half dozen South Downs comprising the whole show in these classes. All the Merino classes were very full, and of the choicest quality. A very marked improvement over the same classes of nine years ago was noticeable—both in size of carcass and length and closeness of fleece. The increase of weight in the fleeces is all wool, as the fleeces are now undoubtedly less "greasy" on the average than ten years since. The wool on the belly and legs has become as long and nearly as close and as well crimped as on the shoulders.

We think that even those most familiar with the flocks of Western New York found their anticipations exceeded in these respects. The Merino breeders there have made decided advances in the direction of a larger bodied sheep, with fleece of greater weight and uniformity—the latter without any increase, or with actual decrease, in the greasy and gummy matter which washes out in scouring. Their fleeces compare favorably in weight with the best of the French Merinos imported some years ago, and which proved so successful in the extreme south-west and in California. At the same time, their fleeces are heavier (in pure wool) and the sheep are much harder. Judging from the samples shown at the Canandaigua exhibition, perhaps nowhere in the United States have the Merinos attained such perfection as in Western New York. The Rays, Martins, McMillans, Lucks, and indeed all the breeders' names which appear in the lists of entries and premiums, have certainly shown great judgment and perseverance in breeding towards a definite object.

English Live Stock for Canada.

Among buyers of live stock at the Royal Show, the veteran importer Simon Beattie, in company with Wm. Miller of Ontario, seemed to take a leading position, by securing for America some of the best things at long prices. Among the purchases made by Messrs. Beattie and Miller, the following are worthy of notice:

1. The prize in "calf heifer" Baroness Conyers, got by Baron Killibry (27949). This heifer has been successful at other shows, and was rightly placed here at the head of her class.
2. The 2nd prize cow Butcher's Duchess, got by Royal Buttery 26th (25075).
3. The "high v" commended" in calf heifer Edith Emily, got by Cahalan (28114).
4. The yearling heifer verbera Royal, got by Royal Duke (25011)—not placed among the winners here, although she has been successful at the shows of Ireland.
5. With these females they take the highly commended bull calf Royal Oxford Gwynne, got by Baron Oxford (23775), out of Gipsy Gwynne by Grand Duke of Lightburn (26240).

The 1st prize cow at the Essex Show, a daughter of Col. King's Old Sam (so well known in America), with a two-year-old heifer of the same blood, will go to America with the above lot from the Royal. Messrs Beattie and Miller have likewise bought the 2nd and 3rd prize pens of Cotswolds, under strong competition, and the 2nd prize pen of Bedfordshire pigs. They have also purchased in Scotland several cows and heifers and a number of Clydesdale horses (stallions and mares).

J. R. Craig and Joseph Snell of Ontario were among the purchasers of stock, but I cannot state definitely what they secured. The animals bought will be shipped immediately, and will probably be heard from at the Provincial Fair next September.—*English Cor. Country Gentleman.*

THE FOLLOWING is a comparative statement of the number of paying visitors attending the Show of the Royal English Agricultural Society, for the last two years, placed side by side with the numbers that attended at Bedford this year:—

	Canliff.	Hull.	Bedford.
Monday, 5s.	1,909	2,893	2,831
Tuesday, 2s. 6d.	8,801	7,220	7,514
Wednesday, 2s. 6d.	12,174	15,014	9,585
Thursday, 1s. till 5 p.m.	33,235	50,079	35,036
Friday,	29,151	20,229	16,763

Agricultural Intelligence.

LIVE STOCK SALES.

Short-horn Sale of Messrs Warnock and McGibben.

This sale came off at Lexington, Kentucky, on the 25th ult. The attendance was very large, not fewer than one thousand persons being present. The following is the sale list:—

Cows and Heifers

Table listing various livestock items such as Easter Day, Airdrie Duke, and others with their respective prices.

Bulls.

Table listing bulls such as Thorndale Duke, Lone Star, and others with their prices.

Summary.

Summary table for the Short-horn sale showing averages and totals for cows, bulls, and head.

Sale of Mr. J. Sudduth's Herd at Paris, Kentucky.

The highest price paid at this sale was \$590 for a fairly bred descendant of Blanche by Belvedere, and the next, \$455, for Mary Lookout 9th, with a fair pedigree.

Summary.

Summary table for Mr. J. Sudduth's herd sale.

Sale of O. M. Clay, Paris, Kentucky.

This sale was principally made up of animals bought in September last of Wm. Jackson, of Cayuga county, N. Y. The stock having been bought in very thin condition, nearly all of them were ordinary, and light colors prevailed in the herd.

Table listing livestock items from the O. M. Clay sale, including Victoria 5th, Venus roan, and others.

Summary.

Summary table for the O. M. Clay sale.

Sale of John V. Grigsby's Short-horns.

This sale took place near Winchester, Kentucky, on the 25th ult., and was well attended, though the prices realized were perhaps scarcely up to Mr. Grigsby's expectations.

Cows and Heifers.

Table listing cows and heifers from the Grigsby sale, including Beulah, Cambria, and others.

Bulls.

Table listing bulls from the Grigsby sale, including Airdrie Duke and Duke of Fairfax.

Summary.

Summary table for the Grigsby sale.

Sale of Mr. J. Barker's Herd.

This sale took place at Paris, Kentucky, on the 29th ult. The prices obtained were scarcely up to the mark of former days, many of the leading breeders having gone home.

Table listing livestock items from Mr. J. Barker's herd sale, including G. A. Gazelle, Red Rose, and others.

A number of young bulls were sold at from \$100 to \$200 each. Most of them were taken by Kentucky farmers.

AT THE SALE of Short-horns, the property of Mr. F. Loney, of Wateringbury, which took place on July 4, Mr. Loder, of Whittlebury, purchased for \$2,000, lot 19, Fourth Grand Duchess of Geneva, roan, calved November 12, 1873, by 5th Duke of Geneva out of Grand Duchess of Geneva.

Sale of J. O. Robinson & Co's. Short-horns at Winchester Kentucky.

This sale came off on the 27th ult. The following are the leading prices realized, with the summary of the whole:

Table listing livestock items from the Robinson & Co sale, including Christmas Eve, Phoebe, and others.

Summary.

Summary table for the Robinson & Co sale.

Sale of Messrs. Joseph Scott & Co., Paris, Ky.

This was a sale of recent importations, and some of the unfashionable "seventeens." The first animal sold was the imported bull Lord Chatham, sold to J. S. Latimore, Abingdon, Ill., at \$740; counterpart, \$270, for Logan, Lexington, Ky.; imported cow Lady Trefoil, \$1050, J. W. Prewett, Winchester, Ky.; Rowena, \$230, J. S. Coen, Cynthia, Ky.; Fanny 5th, \$350, Wesley Warnock, Cynthia, Ky.; Fanny Clay, \$370, same; Beauty, \$450, J. H. Beatty, Illinois; Cherry Girl, \$240, same; Roxa, \$260, same; Neppie, \$700, same; Lizzie, \$340, Iowa; Sallie, \$270, Wm. Sarr, Lexington, Ky.; Bright Eyes, \$265, J. H. Beatty, Illinois.

The others of Scott's sales were young calves or young cows, and sold from \$100 to \$250.

Summary.

Summary table for the Scott & Co sale.

PROFITABLE INVESTMENTS.—Several of the animals sold at the Short-horn sale of Messrs. Hughes and Richardson, on the 22nd ult., were purchased at the great New York Mills sale, Sept. 10th, 1873. The Country Gentleman, in noticing this fact, takes occasion to draw a comparison between the prices obtained at the two sales. His statement is as follows:—

Table comparing prices paid and received for various animals at two different sales.

Showing an advance of \$1,635, or very nearly one-third, on the investment of ten months a_o.

At the sale of Messrs. A. & B. Van Meter's Short-horns at Winchester, on the 23rd ult., 57 females averaged \$619 each, and 12 bulls and bull calves \$133. Sixty-nine head averaged \$533 30, making an entire aggregate of \$36,830.

At the joint sale of Messrs. Warfield, Davidson, Couch, Smith and Kinnaird (reported in our last issue), 93 cows and heifers made an aggregate of \$25,510, averaging \$306 56 each, and 18 bulls and bull calves made a total of \$3,050. The entire sale footed up to \$31,560.

At a sale of Short-horns by Messrs. J. A. Gano & Son, Centerville, Ky., July 21st, the following general result was attained:—

Table showing results of the Gano & Son sale.

REFERRING to the Short-horns at the Bedford Show, the Field says:—"The younger females especially "were of almost unrivalled excellence," and "never, to our recollection, did the class of old bulls show so many famous representatives of different herds or lines of blood."

A GREEN-HOUSE orange tree at Waverly, Ohio bore one hundred and fifty oranges.

DIAMONDS out of beet sugar are the invention of a French chemist.

You can buy land in Florida at five cents an acre. Go south, young man.

POTATOES are so scarce in New Orleans that they are retailed at three cents apiece, and \$10 or \$12 a barrel.

THE NEXT MEETING of the New York Dairymen's Association will be held at Binghamton, on the 8th and 10th of December next.

THE PRESENT barley crop of California, it is said will outweigh that of last year by twenty-five per cent, and the total yield is roughly estimated at 1,100,000 centals.

THE PRESENT has been the coldest summer experienced in Newfoundland for twenty-two years, and serious apprehensions are felt in regard to the crops. The cod-fishery has been very good.

A FINE LOT OF STEERS.—At Chicago, on Tuesday of this week, 88 steers from Mounouth, Ill., which averaged 1,488 pounds, were sold at \$6 75—an average of a little over \$93 each.

THE ARMY WORMS are rapidly disappearing from the vicinity of Sacramento. Although they have created much trouble, it does not appear that they have done much damage.

SILK CULTURE along the Pacific coast, and especially at the foot hills of the Sierras, is becoming a fixed interest, gradually developing a prosperous outlook, that promises to be of great value at no distant period.

THE SHOW of the Royal Agricultural Society of England at Bedford this year covered fifty-eight acres of ground space, and the cattle and implement sheds, it placed in a continuous line, would have extended ten miles.

THE GRASSHOPPERS made a clean sweep in Sheridan Valley, Montana, this year. The valley is usually one of the most fertile and prolific in the territory, but the pests have eaten "every green thing" this season.

A MAN in Victory, Vt., lost nineteen lambs out of a flock of twenty-seven, by washing them in a solution of arsenic to destroy the sheep ticks. The ticks were all killed. He never heard of "Miller's Tick Destroyer."

A FARMER at Mountain Lake, Minn., saved a ten-acre wheat field from the grasshoppers by drawing a long rope over the heads of the grain for several days, until the hoppers got tired of jumping the rope and left.

A DAY'S DEALINGS.—In the first half of the year 1874 the imports of foreign and colonial merchandize into the United Kingdom (not including bullion and specie) have averaged in value £1,030,000 a day; and the exports of British and Irish produce and manufactures £650,000 a day.

THE GRASSHOPPERS AND FIRE. A Minnesotaian proposes that the Legislature of that State shall pass a law compelling every farmer and land-owner to burn the prairies before the grasshoppers are able to fly and while they can only hop over the ground. This course, pursued a few years, he thinks would be successful in destroying them entirely.

MAMMOTH ROOTS.—Among the other "big" things exhibited at the Royal English Show, recently held at Bedford, was a "mammoth mangold" eighteen inches in length and weighing fifty-six pounds. A Tankard mangold weighed thirty pounds, and a turnip, Sweed and Kohl Rabi, fourteen pounds, twenty-two pounds, and twenty pounds respectively.

DEATH OF A FINE SHORT-HORN COW.—A telegraphic dispatch from Des Moines, Iowa, says:—The premium short-horn cow Flora, of Dr. Sprague's herd, and valued at \$1,500, was killed by the cars at Oakwood on Thursday. The track repairers, in fixing a culvert, left a fence down and she got on the track.

THE LEMON CROP is poor this year along the coast of Spain, Africa, and Italy, which usually furnish the supplies. Mentone, on the Mediterranean, below Nice, in the south of France, has a fine crop, however, and the fruit from there bears a sea voyage much better than any other kind. There is now an unusual number of American vessels in the harbor of Mentone. The average cargo for a vessel is 5,000 boxes, each containing 500 lemons. This would make the number of lemons carried by a vessel about 2,500,000.

A GIANTIC EAR OF CORN.—A gigantic ear of corn is now to be seen on the president's desk at the Produce Exchange. It is fully twelve inches in length, and weighs more than three pounds. It was grown on the plantation of Mr. Martin, Montgomery county, Alabama, and was sent up to the president of the Cotton Exchange.

THE REV. MR. WHITE, a Roman Catholic priest has published a letter in the *Kalamazoo Journal* warning intending emigrants against going to the United States, as thousands upon thousands there are unemployed and starving. If in hunch will persist in emigrating, let them, he says, go to Canada, rather than the States.

ACCORDING to a late census there are 370,000 cats in England, and a venerable gentleman attached to the editorial staff of the *London Standard* estimates one mouse and five rats to every acre, making an aggregate of 91,116,000 of these animals, consuming grain enough to feed nearly 3,000,000 human beings. And yet some people do not like cats.

THREE PIGS arrived from England at London recently, a present to W. G. Lewis, of Framlingham, Mass., from Lord Graham, who has done much to improve the breed of swine in England, and whose stock has taken the first prizes at the agricultural exhibitions the last four years. These pigs consist of a boar and two sows of pure white, and are fine specimens of the improved Leicesters breed.

ENGLISH CHEESE MAKE.—From the best information we can obtain with regard to the English make of cheese this season, the quantity will be a full yield. The conditions have been favorable in the pasture. Reports from Glasgow trade in English cheese note that the quantity placed upon sale during the first week in July was moderate, and a disposition to sell was noticeable.—*Utica Herald*.

LOTHIAN SHORT-HORNS FOR AMERICA.—We understand, says the *N. B. Agriculturist*, that Mr. Currie Haulterton, Gorebridge, Edinburgh, has sold a fine short-horn cow (the second prize winner at the late East Lothian show) and three promising heifers, all of his own breeding, to Mr. Miller for Mr. Major Ontario, Canada, at a very high price. Mr. Currie has also sold a nice heifer to Mr. Thomson, Canada.

LARGE MARES.—The cheapest way to get swiftness as one wants, is to breed the best mares. Now has to a large full-blood draught stallion of good form, action and color; and make the second cross if necessary, to get the requisite size, then he may introduce racing or trotting blood to his heart's content. That is, first get your size, with all the style and action that can be had from the draught horse, and then, on that foundation, build just what you want.—*Henry J. Vaughan, in National Live Stock Journal*.

CONCERNING shipping cheese, the *Producers' Price Current* says: In hot weather cheese should be closely boxed, the sides of the box pared down to the health of the cheese, and the cover tightly fitted. This will in a great measure prevent the puffing of the cheeses by the heat. As a further precaution, the boxes when shipped should be placed in the cars bottom up. Shippers should insist also that the cars in which their stock is carried should be well ventilated, so that the breeze made by the motion of the train may circulate freely among the cheese.

THE CROPS IN KENNEW.—The *Appropriator Review* of the 7th inst. says.—The continued dry weather is telling on the crops in this neighborhood, which until lately presented a fine appearance and gave promise of an abundant harvest. The grasshoppers are also committing great ravages, eating up pastures and even in many cases devouring whole fields of grain. Mr. Angus Cameron, near White Lake, has lost nearly all his crop in this way, and many other farmers, especially those along the Fallway Road have suffered in the same way. The cry is everywhere for rain.

MISSOURI FARMING.—What, says an exchange, can be pleasanter than the life of a Missouri farmer? At daylight he gets up and examines the holes around his corn-hill for cut worms, then he smashes a colling moth larva with a hoe handle until breakfast. The forenoon is devoted to watering the potato bugs with a solution of Paris green, and after dinner all hands turn out to pour boiling water on the chumz bugs in the corn or wheat fields. In the evening a favorite occupation is smudging peach trees to discourage the curculio, and after a brief season of family devotion at the shrine of the night-flying coleoptera, all the folks retire and sleep soundly till Aurora reddens the east and the grasshoppers tinkle against the panes and summon them to the labor of another day.

SALE OF DIVONS, SOUTH DOWNS AND BERKSHIRE. At an auction sale made by Dr. Morris at Philadelphia recently, two Devon cows brought \$160 and \$90, a two year old heifer, \$53; five heifer calves and one bull calf brought prices ranging from \$5 to \$55. Full pedigrees accompanied each animal. The South Downs comprised 3 rams, 3 lamb rams, 15 and 8 ewes, and the highest figures reached were \$23, \$16, \$15, and \$12 respectively. The price of eight month or three month pigs to \$31 for older sows and boars.

CORN THIRTY-FOUR YEARS OLD.—A. Allen, Esq., of Swanda, N. Y., sends us some corn raised by him 34 years ago. It was of a reddish yellow originally, but now somewhat faded, looks like our common yellow corn. The kernels are still plump and would make good meal. Mr. A. used it for seed at eight years old successfully, but has not been able to cultivate it since ten years old. Had it been excluded from the air, it would probably not have lost its vitality. This corn was raised while Mr. A. was yet young, although he now approaches the allotted time of man. What changes in the world's history have taken place since the seed in the earth to produce this!

Live Stock Journal.

THE FOLLOWING is a correct statement of the number of oranges in the United States on the first of June:

Alabama.....	604	Mississippi.....	592
Arkansas.....	291	Missouri.....	1,979
California.....	420	Nebraska.....	187
Florida.....	10	New Hampshire.....	31
Georgia.....	640	New Jersey.....	73
Illinois.....	1,481	New York.....	218
Indiana.....	1,062	North Carolina.....	329
Iowa.....	1,503	Ohio.....	947
Kansas.....	1,223	Oregon.....	184
Kentucky.....	1,101	Pennsylvania.....	184
Louisiana.....	128	South Carolina.....	293
Maine.....	27	Tennessee.....	933
Maryland.....	101	Texas.....	400
Massachusetts.....	75	Vermont.....	120
Michigan.....	460	West Virginia.....	55
Minnesota.....	221	Virginia.....	260
Wisconsin.....	497	Washington.....	497
Wyoming.....	221		

EMIGRATION FROM THE UNITED STATES.—According to the New York papers there are more people leaving that port for Europe than there are immigrants arriving. This is said to have been caused by the great reduction in fares brought about by competition. Tickets have been sold from Chicago to Liverpool for 17, and vice versa, and the *Herald* of Saturday last states that many tickets had been sold in New York that day at \$11 for steerage passage. Such was the rush for berths that it was estimated that over four thousand had engaged passage, and would leave that day for Europe. The "City of Chester" and the "Egypt" had an immense number of passengers going by them. It may be remarked that not so many steamers are running now as last year, and that a great many come out merely for the home cargo, and bring out ballast, which, for purchasing and discharging, costs only \$1 a ton.

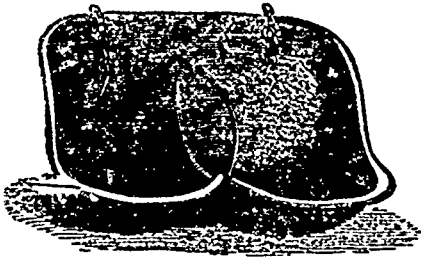
TALL GRAIN.—The *Vivian (Cal.) Delta*, June 13, says: Mr. George H. Webb showed us, a few days since, some stalks of wheat that measured six feet on the roots, and some of oats, of the common variety, which measured seven feet. These are an average of the whole crop on the place. One man would follow the machine while the grain was being cut, to clear away the first swath, so heavy was the crop. This grain was raised on his place at the end of Court Street, about half a mile from town. The heads are of very fair weight, and the straw bright and clear. He also informs us that about a week after mowing a lot of clover hay, the new growth had made a stand of a foot in height, having in many places grown into the cocks so as to hold them against the pitching fork. It makes a growth of about two inches per day, and the stalks are very tender. Doubtless are requested to call at the farm and verify these statements if they choose.

TERRENLE STORM IN ITALY.—A storm of unusual severity visited the north of Italy and the south and east of France a few days ago. A letter from Antibes, in the *Debate*, states that the thunder and lightning in that district was terrific and that the hail was driven by the wind with such force that the leaves of the trees were riddled or torn to shreds, leaving nothing but naked branches. Figs, vines, olives and other fruit trees were ravaged, and some were torn up by the roots. People on the roads were felled and vehicles overturned. The hurricane did not keep a straight route, but was influenced by the currents formed in mountain gorges and in the valleys and wheeled about, carrying ruin wherever it went. The sea too was unusually agitated, reflecting the terrible color of the clouds, and maritime disasters will probably be heard of.

Breeder and Grazier.

Hog Troughs.

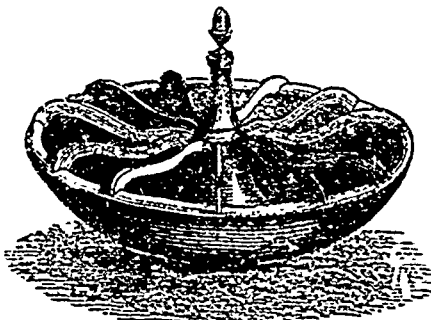
A novelty, but nevertheless one of great advantage and profit, has recently been introduced in Suffolk, England, in the shape of a hog trough. In that county, justly celebrated for its noble breed of pigs, feeders have lately discovered that the animal which can feed easily—that is, without annoyance or disturbance of any kind on the part of its fellow-eaters—will feed much more rapidly and consequently at less expense. In fact, they have shown experimentally, to their own satisfaction at all events, that the jamming and jostling of a number of hogs together over an ordinarily constructed trough, interfere very materially with their fattening. Holding such a theory, ingenuity was set to work, and soon invention came to the rescue with a trough which is said to answer every purpose and to have given every satisfaction. It is made in three styles, viz., single, double and circular, the first and last of which we illustrate.



The single trough is intended to stand against a wall or boarding, and is so constructed that pigs of any age or breed will feed from it with the greatest comfort, and without wasting the food by throwing it over the sides, or putting their feet into the trough. The ease with which the pigs feed greatly conduces to their speedy fattening.

The trough is fixed to the wall by a chain hooked on to a staple driven into it. By taking up or letting out this chain the Trough is fitted so as to hold more or less food according to the age and breed of the pigs which are to feed from it.

Out of the double trough the pigs can feed quietly and comfortably, each one having its own separate, cup-shaped dish, towards the centre of which the food always runs. They cannot jostle or crowd into the trough, and there is consequently no loss or waste of food, nor a risk of a strong pig getting the share of the others, which is frequently the case with other troughs.



The circular trough is self-explanatory. It is for use instead of the double one where the pen is more circumscribed.

A "FREE-MARTIN" BREEDING.—Why a heifer calved with a bull should be called a free-martin, we do not know. There is a common opinion that such a heifer will not breed, and this seems to be true in most cases, but there are exceptional cases. One is reported from Kentucky. Mr. Hall, the owner, is reported to have said that this is the first case where a free-martin has bred in his herd, although he has had six,

Cattle at the Show of the English Royal Agricultural Society.

Short-horns.

There was a splendid turn-out of this naturally magnificent breed of cattle, whose merits will not be snuffed out by fancy prices, as Dutch tulips have been. Their value in the production of meat is intrinsic, and although more money be given out at times than "value received" would seem to warrant, they are sure always to maintain their reproduction as the best animals for any climate and as the most successful of crossers, no matter what the other bred may be. Do you want a cross with a polled Angus? the short-horn is ever fit and well for his work in the country where the "doddies" are "to the manor born." Would you like to add flesh to milking qualities? you can cross the short-horn with an Ayrshire and find that he has not failed you. Do you wish to impart fashion and quick growth to a Hereford? it can be done by mingling its blood with that of the Teeswater; and no better meat could be set upon a table than that which the short-horn and the West Highlander produce.

In the Bedford show-yard were congregated a large number of the primest short-horns that the kingdom can produce, and by the kingdom we mean the world, despite the recent almost fabulous Yankee prices. Altogether there were 162 entries in the several classes, and not one of the sections but could shew animals of sterling merit.

In the aged bull class there were seventeen entries, and with one or two exceptions all paraded the ring. It was a grand sight as they marched majestically past the spectators in all their "pride of place." We cannot agree, however, with the judges that all of them were placed right. Telemachus, who was first at Hull when he was sadly down on his legs, was this year supplanted by Lord Irwin, who we did not think looked so blooming as he did when he appeared in the city of oil-cakes. Mr. Bruce is the owner of Lord Irwin now, having purchased him from Mr. Linton at the Hull Show. It is well that his brother's points were not in operation, else he would not have stood in the position in which he was placed.

The difference of judgment in this case shows the necessity of some such scale as Mr. Bruce, Inspector of Live Stock in New South Wales, suggested through our columns. What on earth are we to go by—the capriciousness of judges only? Put the matter in a syllogistic method. Telemachus in worse form at Hull conquered Lord Irwin; at Bedford Lord Irwin, not looking any better, if so good, as at Hull, carried the laurels away from Telemachus. Is there any true basis for our present method of judgment beyond individual liking, prejudice in regard to strains of blood, and obstinacy on the part of one of the three judges who are usually appointed? We should like to have the question answered.

The third-prize animal in this class was Duke of Aosta, a nice shapely bull of good substance, which handled well. He had plenty of scope for his lungs to play, and his quarters were long and well filled up. This bull was second at Doncaster, and his owner had little reason to feel ashamed of him. He was highly commended at the Bath and West of England. Our old friend the Earl of Warwickshire was only highly commended here, although second at the Essex Show, he might have been in a better place. Lord Lichfield's highly commended and reserved light roan handled like a glove, he had a nice head, good hair, and lengthy quarters. He won the champion Cup at Newcastle-under-Lyne. Royal Lancaster also was here, and although he can boast of twenty-five premiums gallantly won on well-contested fields, his owner can scarcely grumble at the award. Royal Lancaster's contour is not exactly what it used to be. He is rather bare over the shoulder, and now looks a little courser at shoulder joints than he was wont to be in his earlier days. Mr. Stratton's first at the Bath and West of England was only fourth at Bedford. He is a nice bull, but too fat.

In the two-year-old bull class Mr. Linton's Sir Arthur Ingram won champion honors in a good class of fourteen. He is a bull having much substance, shews well in the front with a good head; but he is not quite so well filled up behind the hooks as could be desired. He fairly got the first premium; but his merits will further be tested at the Newcastle Show and at Inverness, whither we understand he is going. The second prize, belonging to Messrs. W. & Henry Dudding, is a bull that stands well upon

his legs, and has gaiety of gait. He has a fine head, a good round of beef and a deep brisket, but his touch is not satisfactory, and he is barish along the top. Mr. Ackers' nice bull got a high commendation. Mr. Walter's bull, first at Reading at the Hants and Berks, where we described it as having plenty of flesh, was left out. Mr. Statter's third should not have been in the prize-list at all. It was ugly in color, handled badly, and was slack in the waist. We liked Mr. Willis' Prince of Cashmere much better. Mr. Outhwaite's Lord Godolphin, first at the Bath and West of England, was likewise first in the yearling class at the Royal. He is a lengthy, level-topped bull of superb quality, and his underlines are as good as his upper ones. He has a noble characteristic head. He has improved since we last saw him, and if he continue to keep his health he is almost certain to rival Royal Windsor—the greatest bull of his day and generation, with perhaps the exception of Forth, about whom we could never go into ecstasies. Rapid Rhono, belonging to Lady Pigot, was beaten here by Colonel Loyd-Lindsay's Prince Rupert. The fourth prize was awarded to Mr. Garne's Aachen, whose back was like a billiard-board, whose quality was unexceptionable, and whose hair was of the right color and texture. The Marquis of Exeter shewed unsuccessfully 6th Telemachus, a very good bull, but rather chubby after the fashion of Forth. This class was a good one. So, likewise, were the bull calves. Colonel Loyd-Lindsay's first at Bristol was placed in the same position at Bedford, and no one could well murmur at the decision of the judges. Mr. Outhwaite's Duke of Schomburg was a good second, and Mr. W. G. Garne's Ranger Prince was well led out for a third.

The cows were a capital class, Vivandiere, who has been described so often that it would be superfluous to note anything beyond the fact that she was looking well, was first. Mr. Garne's Butterfly Duchess—a cow of a sweet countenance and fine quality—was second. The latter, we understand, has been sold for a high sum to go across the seas. Mr. Hutchinson's third was a cow of good substance, rather over-done with flesh, and plain. Lord Kinnaird's third at the Highland and Agricultural Society, was passed over unnoticed by the judges. She is a fair cow, but she was not quite up to the mark of the successful competitors, as the present mode of judging goes. We have noted against Mr. Stratton's reserved cow that we should like to have seen her farther up on the list. She has nice hair, good quality, well-sprung ribs, a fine eye, open, pleasant countenance, a symmetrical, wide barrel, good chest, and strong loins across the hook, with a suitable breadth for breeding.

The heifers in milk or in calf not exceeding three years of age were a very fine class. Mr. Outhwaite's Baroness Conyers again stood at the top of the tree. Lady Pigot's Rose of Wytham is not improving; she seems to be developing the runps a little too much at her early age. She got third prize, and the same lady got highly commended for Victoria Matutine. Mr. Thom's second prize was a very nice animal. It had a grand coat, a symmetrical form, a good twist. She was winner of the first prize at Cork, and along with her sister the 60-guinea cup. This class was generally commended, as it well deserved to be.

In the yearling heifer class we found one of the guns of the show. Indeed, we do not think that there is a better heifer in England or Scotland than the one belonging to the Rev. Bruce Kinnaird, who carried off first honors at Bristol, at Stratford, and other places. Whether she will improve with age is a question about which we should not care to give an opinion as she stands. She is certainly *facile princeps* at present. Lord Sudeley's third is a nice animal, rather short in the neck, otherwise she must have stood before Mr. Statter's second, which was short in the quarters, lacking in neck vein and light in flank and thighs. The heifer calves were of superior quality. Here Colonel Loyd-Lindsay again came to the front with an animal of good quality and silky hair, but showing a slight tendency to go down in the back as age wears on. Lady Pigot's second was a good one.

Herefords.

In the aged bull class there were few exhibits, but all were picked over. Mrs. Edwards was first with a bull possessing quality and quantity of flesh, and he walked about as nimbly as possible, notwithstanding that he appeared to us a little too fat. Mr. Fenn's second was a nice one, the third we thought quite as much of. The second two-year-old bull at Bristol was first at Bedford. He deserved his honor; Mr. Evans has credit by him. The second bull was an excellent one also, but he lacked the style of the first. The yearlings and the calves were very good. The cows were an admirable selection from the best breeders.

The Devons.

The collection of these animals was of course not so large as in the west country. Bedford is out of their beat, but the best breeders were represented, and the prizes were a little reversed from what they were at Plymouth and Bristol. Still the jewel of the exhibition was Mr Senior's heifer calf. She stood as prominently out from the others as did Mr. Kinnaird's heifer in the short-horns.

The Jersey Cattle.

There was much dissatisfaction expressed about the judgment in the case of the aged bulls. It was generally thought that Mr Sim son's bull ought to have been first. The first prize was plain all over, and lacked both back ribs and room for the healthy play of the heart.—*The Farmer (Eng.)*

Recent Investigations Concerning the Feeding of Animals.

It is well known that herbivorous animals are fond of common salt, and this is as true of wild animals as of those domesticated by man. Carnivorous animals, on the other hand, either have no liking for salt or show a positive aversion to it. Cats, for example, will rarely touch salt meat. This difference is not easily explained. The blood of both classes of animals contains a certain amount of soda salts, but the quantity of soda in a vegetable diet is not necessarily less than in one of flesh. A German experimenter, Herr Bunge, has been the first to suggest a plausible solution of the enigma. A vegetable diet furnishes twice as much potash in proportion to its soda as a flesh diet does, and it occurred to him that the greater supply of potash must be attended with a greater waste of soda. To test this theory experimentally, he put himself upon a perfectly uniform diet of beef, bread, butter, sugar and a small quantity of salt. When, by daily analysis of the urine, he found that the quantity of soda and potash excreted had become constant, he proceeded to take such a dose of potash salts during the day as would raise the amount of potash in his diet to a level with that daily consumed by a herbivorous animal. The result was an immediate excretion of chloride of sodium in the urine, the amount being at once increased threefold. Much potash was, of course, also passed. The experiment was repeated at various times, employing different salts of potash, but always with a similar result, a dose of potash in every case producing an immediate excretion of soda. Bunge believes that this tendency of potash to produce a greater waste of soda in the system is the cause of the desire shown by herbivorous animals for common salt. Their vegetable diet is generally very rich in potash, and they instinctively seek an additional supply of soda. Soda does not seem to be an essential ingredient of plants, but it is certainly indispensable in the animal economy. In muscle, and in the blood corpuscles, potash is an essential constituent; but in the fluid portion of the blood potash is actually injurious, and if injected even in small doses, produces death. Soda salts, on the other hand, can be injected with safety, and their presence in the blood is essential to the continuation of vital processes.—*Journal of Chemistry.*

A Plea for Sheep.

Lately, visiting some of the sheep farms of Lincolnshire, I noticed that while the Midland farmer talked to his horse and even petted his oxen, he treated his sheep as an animal peculiarly devoid of intelligence. Now, I noticed among my agricultural friends this general sentiment in practice, a sort of general disregard for the intelligence or feelings of sheep, though to me there is as much sad pitiful intelligence in the eye of a sheep as there is in the "patient melancholy" face of a cow. While the farmer has brought sheep to the perfection of size and shape and profit, that sort of mutual regard which animated sheep, shepherds, and shepherdesses in the olden days seems to have died out. St. John says, "To him the porter openeth: and the sheep hear his voice, and he calleth his own sheep by name, and leadeth them out. And when he putteth forth his own sheep, he goeth before them, and the sheep follow him, for they know his voice." On these words Dr. Hammond observes that the shepherds of Judea knew every sheep separately, and that "shepherds of that country had a distinct name for every sheep, which each sheep knew and answered by obediently coming or following to that call." Moreover, they trained up the ram to collect the flock, a far better device than that of the sheep-dog. Homer endorses this in his simile of Ulysses drawing up his men to a ram ordering the flock. On the authority

of Philo Judæus, a philosophic Jew, born and bred in Egypt, in his first chapter concerning the Creation, says: "Woolly lambs laden with thick fleeces in spring season, being ordered by their shepherd, stand without moving, and, silently stooping a little, put themselves into his hand to have their wool shorn, being accustomed, as cities are, to pay their yearly tribute to man, their king by nature"—*Gentleman's Magazine.*

WHEN LAMBS get through being lambs they become sheep. This takes the sentiment out of them.

A MULE'S COLT.—Another of the rare but possible cases of a mule producing a colt is reported from Franklin Co., Ind.

CURE FOR BRITTLE FEET.—Wash the horse's feet clean; when dry, apply with a brush, to the hoof only, a coating of this mixture: Fish oil, one part; vegetable tar, one part; oil of tar, one-eighth part.

HEMP SEED to prevent abortion is recommended by W. R. Duncan, a well-known Illinois short-horn breeder, who says that for twenty years he has not failed to prevent abortion in any stage by feeding one pint of seed per week, up to the time of delivering, in other feed.

HEIFERS GIVING MILK WITHOUT HAVING A CALF.—There has been much written about this as a rare instance, but I think that almost every heifer can give milk before calving or even before impregnation, when the heifer is milked some time. In some parts of Norway there is a custom among poor people (very often used) to commence to milk the heifers at about one year old, and I never knew of any instance in which they did not succeed in getting them in milk.—*L. Michelet in Western Farmer.*

CROSS JERSEY BULLS.—At the recent Exhibition of the Agricultural Association in England for the south-western counties, there was considerable Jersey stock exhibited, and the editor of the *English Agricultural Gazette*, in reference to this matter, says—"It is strange so many of the Jersey bulls should be such ungovernable and downright dangerous brutes; and therefore, in spite of other merits we protest against prizes going to animals which are blindfolded and demand the precaution of two attendants.

LET THE HORSE ROLL.—Horses that are kept in the stable during summer, should be given daily the luxury of a roll on the earth. Rolling is the means given by nature for the animal to rid itself of vermin and skin diseases, and it tends to make the animal healthy. Some owners object to allowing a horse to roll on the bare earth, because it gets dirt into the hair and makes extra work to keep the animal clean, but the extra work pays, if rightly understood. We allow our horse to roll in the dirt when he is not moist with perspiration, and then stand an hour or two with his coat full of dust before being cleaned up.—*Ohio Farmer.*

A QUEER DINNER FOR A COW.—A correspondent vouches for the following. "A few days ago a man on a certain farm on the estate of Lethen put oil his coat while he was engaged doing some work, and hung it up on a fence. A cow chanced to come the way and espied the jacket, and commenced eating it. When the man returned, he found the cow had devoured the whole coat, with all its contents, except a pocket book, which was left lying on the ground. Stowed away in the pockets of the coat were two sets of plans and specifications, two ounces of tobacco, and a box of matches, all of which were swallowed by the cow, with apparently no discomfort! The pocket-book, which it fortunately left, contained two one-pound notes. The cow that day had certainly a strange dinner!—*Nairn Telegraph.*

VALUABLE HORSES.—The following are some of the prices paid for noted American horses: Kentucky, \$40,000; Norfolk, \$15,000; Lexington, \$15,000; Kingfisher, \$15,000; Glenelg, \$10,000; Smuggler, \$15,000; Blackwood, \$30,000; Jay Gould, \$30,000; Dexter, \$33,000; Lady Thorne, \$30,000; Jim Irving, \$30,000; Goldsmith Maid, \$20,000; Startle, \$20,000; Prospero, \$20,000; Rosalind, \$20,000; Lulu, \$20,000; Happy Medium, \$25,000; Clara G., \$30,000; Pocalhontas, \$35,000; Edward Everett, \$20,000; Auburn Horse, \$13,000; Judge Fullerton, \$20,000; Mambrino Bertie, \$10,000; Socrates, \$20,000; George Palmer, \$15,000; Mambrino Pilot, \$12,000; George P. Daniels, \$8,000; J. G. Brown, \$12,000; Flora Temple so'd, when aged, for \$8,000, for brood mare, \$25,000 was offered and refused for Tom Bowling last summer. \$30,000 was offered and refused for Bassett in his three-year-old form; \$25,000 will not to day buy Baywood or Asteroid; \$40,000 was offered and refused for Woodford Mambrino, and \$20,000 for Thorndale.

The Apiary.**Reasonable Hints**

Now is the time to look after surplus honey. Little or none will be stored during the remainder of the season, except where buckwheat abounds. Where there is abundance of buckwheat, it is well to empty the combs by the use of the extractor, and leave the bees to store up the buckwheat honey for themselves. They appear to like it, and to thrive on it, quite as well as on that which is more desirable for table use.

No good end is gained by leaving honey boxes in the hive after they are filled. Some think it is a protection against the moth miller, but better protection can be secured by removing them to a dry, cool cellar. Should any moth eggs hatch, the larvae can be quickly destroyed by a dose of brimstone smoke. If boxes of honey are left in the hive, they are apt to depreciate in value, owing to their becoming dark in color, as the result of the bees running over the combs. Not unfrequently, too, the surplus honey is all carried below, to the surprise and disappointment of the over-confiding bee-keeper.

It is therefore on various accounts desirable to remove the surplus boxes as soon as the cells are filled and sealed over. There are several ways of doing this, but the method adopted by Captain Hetherington is as good as any, and better than some. It is as follows:—Slip two pieces of tin under the box, then remove the box with one tin, which will keep the bees in, while the other tin will keep the bees from coming up from the hive below. Now turn the box bottom up on a board and place an empty box on it, removing the tin to let the bees pass up into the empty box. Remove and treat all the full boxes in the same way, rapping on them if necessary to force the bees to go up into the empty boxes, then slip the tin under each box and place them on the hive, when both tins should be withdrawn. Any boxes in which a few bees remain may be placed in a dark room with a small window, or in a tub or barrel, covered by a thin cloth, which should be occasionally turned over to allow the bees clustering on the under side to return to the hive. Paste a paper over the holes in the boxes to keep out bees, ants, or moth-millers.

There is never any difficulty about selling nice, fresh, white, virgin honey, stored in clean boxes, and looking so lusciously tempting that even an ascetic might be expected to bid a liberal price for it. While broken and black looking honey goes a begging for a market, box honey in A 1 condition is always in demand. Generally speaking, as with other products of the farm, so with this, it is well to seize the early market. But very little is gained by holding over for better prices. Often there is waste and loss as the result of delay.

When the yield of honey fails, it is well to take precautions against robbing, especially in the case of weak stocks. Contracting the entrance will usually prevent this trouble. Bees are brave defenders of their citadels, if they have a chance to resist attack. Two wide an entrance gives the advantage to an invading force. Make the entrance a Thermopylae, and the bees will defend it valiantly and successfully, even though the colony be not a strong one.

Stocks that have swarmed should be examined, to see if they have fertile queens. Though a sight of the queen may not be obtained, yet the presence in the hive of eggs and larvae may be taken as evidence that there is one. Queenless colonies should be supplied with a queen or queen-cell at once, and, if necessary, strengthened with bees and honey. It is well to have some surplus queens on hand to give to queenless colonies, even if they are not as pure as could be wished. "Better a living dog than a dead lion." A common stock can be Italianized another year, but an extinct stock is a dead loss.

A careful inventory should now be taken of the condition of the apiary as to stores for the coming winter. Such hives as need feeding should be marked, and preparations made to give their inmates an opportunity of laying in what additional supplies may be needed. They must be furnished with syrup or whatever food it is determined to give them, before the nights get too cool to admit of their working. To guard against robbing, which is very apt to take place during the feeding process, they should be fed in the evening, so that before morning their task of storing will be done, and no unusual stir be observed by other bees, else marauders will be attracted, battles fought, and stores pillaged. If any stocks are weak in numbers, as well as deficient in stores, feeding will have a tendency to stimulate the queen to lay, and the hive will become recruited with young bees, before winter sets in.

A Bee Parasite.

I hasten to send you a little insect, apparently a red spider, which I took off one of my black queen bees this afternoon. She had been dethroned to make room for a Ligurian, just sent me, and was released in a queenless hive into which I had introduced her on Saturday last. I opened the hive today to find out whether she was alive and well, and found her with this little creature on her back. For a long time I was unable to remove him, as he was quite indifferent to the pokes I administered with a little piece of grass, and hid himself under her wings, so I was obliged at last to capture her majesty, and in the safe retreat of my study remove this too faithful attendant with a pair of tweezers. I found only two grubs in royal cells. Probably the presence of the spider and the cold weather had interfered with breeding.—*Henry Day's, Nettled Fearage, Honey-on Thomas, May 6, 1874.*

[The insect was sent to an eminent authority connected with the British Museum, who writes: "The insect sent is known as the bee-louse of Europe, and in some parts of the Continent is not uncommon; in fact, it is a nuisance, as many as fifty to one hundred being sometimes found in a single bee in Italy, &c. It is a wingless dipteran, allied to the forest fly, "Hippobosca;" it is named *Braula cæca*: the young are said to be produced in the pupa state; it lives by sucking the bees. No doubt more are to be found in the hive whence the specimen sent was obtained: if so, a specimen or two would be acceptable for the Museum Collection. It is not frequently found in England, except in imported swarms of the Italian bee."—*Brush Bee Journal.*]

Eggs of the Bee-Moth.

The eggs of the bee-moth are entirely round and very small, being only about the eighth of a line in diameter. In the oviducts they are ranged together somewhat in the form of a rosary. They are not developed successively like those of the queen bee, but are found fully formed in the ducts, a few days after the moth emerges from her cocoon. The female deposits them in small parcels or clusters on the combs. If any one wishes to witness the discharge of eggs, he need only seize by the head a female two or three days old, holding it between the finger and thumb. She will instantly protrude her ovipositor, and the eggs may be seen passing along the semi-transparent duct.

That the moth does not deposit her eggs in the pollen of flowers, as some imagine, but on the combs in the hive, is very certain. I have repeatedly found little clusters of eggs on combs which I removed out of the hive.—*Dr. Donhoff.*

COLD AND DISEASE.—Russian winters are long and severe much more so than we ever experienced in this country, but writers assure us that bees there are not injured by the cold. In the language of one—"they come forth, like the vegetable world, at once in full vigor." This is attributed to the constancy of the cold, by which they are kept in a dormant state all the time. Sudden and extreme changes are injurious. How does this tally with the doctrine that cold killed the bees during the last two winters?

The Rocky Mountain Grasshopper.

This insect, so destructive during the present season to the crops in Manitoba and some of the western states, resembles our common red-legged grasshopper (*Cubitermus fuscus-rubrum*) in size and general appearance, but has much longer wings and wing-covers in proportion to its size. Rev. Cyrus Thomas, who has made this order his especial study, and who has observed them in their native wilds, states that they are quite a distinct species from the eastern red-legged grasshopper, and that when the Rocky Mountain species makes its migrations to the low lands, it frequently alights amid the common eastern species also living there, but never mixes with them in the least, and when the migratory species leave the place, they fly away in masses without taking any of the common species with them. They fly in numbers so immense and to such distances, and breed in such out-of-the-way and sterile places—generally coarse, gravelly table lands where vegetation is very scant—that as yet no remedy has been discovered, at least when the insects are in the perfect state and furnished with powerful wings. Fire and water have been tried with but little effect. When in the larva state and incapable of flight, they may be destroyed in limited numbers by rolling the land with heavy rollers, or setting fire to the grass in circles in the spring, but this would be impracticable on a large scale, as the first legions that produce the second brood, doing the greatest damage, are mostly bred on waste places where only Indians and wild animals roam. Ploughing the ground as soon as the grasshopper has laid its eggs has been found the most effective. A deep layer of soil turned over is found to crush the eggs, and thus destroy the spring crop of grasshoppers. This experiment has been made upon small spots of ground where myriads of eggs were deposited, and not a grasshopper came from under those layers of earth that covered the eggs. This treatment would, no doubt, be very good to protect certain fields or gardens from the injuries inflicted by this insect when in the larva state, but it would be no protection whatever from the winged hordes that migrate later in the season.

The Chintz Bug in Illinois

A correspondent of the *St. Louis Republican*, writing from Jacksonville, Ill., says:

"Your correspondent has had occasion to visit several localities in this county, and finds that the ravages of the chintz bug upon the growing corn is much greater than was first reported. A Mr. Leadford, residing four miles east of Jacksonville, has ten acres of corn that has been totally ruined by these pests. The entire field looks as if it had been scalded with boiling hot water—the stalks being dead and dry, and all fallen to the ground. Many other fields in the neighborhood are one-fourth and one-half destroyed, with countless millions of the bugs 'going for' the remaining good parts; and there is no calculating the extent of damage that will be sustained to this cereal, as the insects are seemingly just beginning to make their appearance. In some fields, apparently untouched and in a fine growing condition, by stripping off the lower leaves of the stalks, these bugs may be found in great numbers, so it may be well supposed that their disastrous work has but just begun. Recent advices from Brown, Pike, and other adjoining counties, calculate the losses in their localities from these same pests in about the same manner as do farmers of this county. It may be safely estimated, say a good many farmers, that at least one half of the entire corn crop will be destroyed. In many instances these bugs have been seen migrating from stubble fields to fields of corn near by in great armies, so numerous in places that you could not see the ground. These insects have been steadily increasing in numbers the past few years, and should the increase continue in the same ratio, and no plans be devised to abate the terrible destroyers, it will be almost out of the question to raise corn, oats or even wheat in this country in a few more years. The farming community are becoming much alarmed at the present state of affairs; and if any of your readers can give an available mode by which the spread of this terrible scourge may

be abated or the destructive insects annihilated, they will confer a lasting favor upon thousands of the tillers of the soil, and do a most benevolent act that will be of general good to the entire public. Farmers are anxious for information upon this subject."

How Orientals Scoop the Locusts.

A gentleman who has been for many years a resident of north-western India, Mesopotamia, Syria, and North Africa, countries visited annually by the dire scourge of locusts, writes to the *New York Herald* an account of the different ways in which the devastators are circumvented. A hint from countries which have struggled against them for forty centuries may be worth having. We extract as follows:

It is a remarkable fact that the regions mostly invaded by locusts are notoriously destitute of fuel of any kind, yet the natives invariably employed smoke wherewith to oppose the invading host. As their success depends upon the quantity and density of the smoke, and wood being scarce and peat and coal altogether unknown, the inhabitants carefully collect all the dung of their camels, horses, cattle, &c., and mix it with chopped straw, grass or roots, shape the mixture into round cakes about seven inches in diameter by an inch and a half in thickness, and dry them in the sun. These cakes are called "Chowpattee," by the natives of western India. They burn as freely as good peat, but create a dense, stifling smoke, the very thing needed to keep an invading locust host at bay, or at least to cause it to deviate in its course of destruction. Indeed, I have often seen these "Chowpattee" fires burned with really wonderful effect for that purpose. Their efficacy of course depends altogether upon proper management, as they have to be lighted before the locusts have arrived in the localities which these fires are intended to protect.

The locusts will seldom or ever take to their wings before sunrise, and rarely if ever "drift" (fly) after sunset. Even if they do light on the ground between sunrise and sunset, they will always be found to be very restless, easily disturbed, and they will readily take to their wings (rise) again if approached by either man or beast to within a distance of ten feet. During the night they will invariably be found at rest, that is to say, settled on the ground and feeding voraciously; but in less than two hours time they will drop into a kind of semi-lethargic condition, when they are utterly unable to take to their wings. Taking advantage of this comatose and temporary helpless condition of the locusts, the inhabitants of the countries above mentioned drive all their camels, horses, mules, donkeys, oxen, cows, sheep and goats over the ground covered by the obnoxious insects, which are trampled to death and crippled by the million under the animals' feet.

Let our distressed settlers of the north-west imitate in this matter their uncivilized fellow-sufferers of Asia and Africa. Let them kindle brisk fires early in the morning, at least one hour before sunrise, all around their farms or fields; or if that be impossible, let them kindle them all along that side in the direction of which they expect the invasion of the locusts. The fires should not be more than 100 yards apart—the closer the better. Coal tar, half-dried peat, or still less expensive matter, such as grass, sods, wet straw, green brushwood, reeds, cattle dung, bones, horns and hoofs of dead animals, refuse leather and hides, cast off shoes and rags—in fact, anything that will create a dense, stifling smoke and is at the same time inexpensive, should be thrown into these fires, and a vigorous fumigation should be kept up from sunrise to sunset, or as long as the locusts are "on the wing."

MANDRAKE ROOTS FOR POTATO BUGS.—A gentleman residing in Brecksville, Ohio, reports a very successful treatment of potato bugs, with a decoction of mandrake root tea. The roots are boiled in water and the decoction sprinkled on the potato vines, the same as directed for the solution of Paris green.

POKE-ROOT FOR DESTROYING INSECTS.—D. F. C. Renner, of Frederick county, Maryland, writes to the Department of Agriculture, that several years ago he collected some poke-root (*Phytolacca decandra*) for medicinal purposes, and placed it at various places about the house to dry. After several days he observed that there were many cockroaches lying dead; and upon examination, found they had been partaking freely of the poke-root. Some of the root was placed near their haunts, and the result was that it rid the premises of those insects. Since then he has communicated the remedy to others, who have tested it with satisfactory results.

Miscellaneous.

Farmers' Drinks.

"Laborer," in *New York Tribune*, says:—A wholesome drink which can be cheaply furnished and that will take the place of an occasional visit to the bar-room will, I think, be a benefit to the laboring man, and may, by being common and good, prevent temptation to something stronger. It is apparent that it is the taste of sharpness that is wanted rather than the intoxication, and there are a number of drinks that cost but little which refresh well in a warm day and when the laborer is tired. Among those made from malt, sugar and hops are the strongest, but no necessarily the sharpest to the taste. I will give a few simple directions. A washing tub or barrel, holding from ten to twenty-five gallons, and a kettle or boiler in which to heat water is necessary, besides the keg, cask or bottles to hold the beer. The use of malt means pale-malt, to be obtained at about \$1.50 to \$1.75 per bushel of any grain dealer in New York or other city. The following are some recipes:

1. Ground malt, one-half bushel; hops, six ounces; water, 20 gallons; boil one hour, strain and add one-half gallon molasses. When nearly cool add one-half pint yeast, and barrel. As soon as fermentation commences bung it down or bottle. This may be used in smaller proportionate quantities.

2. One-quarter pound hops, one-half gallon molasses; boil one hour in ten gallons of water, strain and when nearly cold, add one-half pint yeast. This may vary in quantities to suit. If more molasses is used it will be stronger when fermented.

3. Fill a boiler with the shells of green peas and cover with water, boil slowly for three hours, strain and add the liquor of boiled hops to make it bitter to suit the taste, and when nearly cool, add yeast. Molasses will add to its strength.

4. Gather spruce boughs, birch twigs, birch bark, wintergreen, sweet fern, in fact, almost any whole some root or herb, boil, strain, and add molasses and yeast.

5. Hops, eight ounces; molasses, two gallons water, thirty gallon; boil one hour, strain, and when cool add one-half pint of yeast. Smaller proportionate quantities of each article may be used with less or more molasses.

6. Water, ten gallons; molasses, one gallon essence spruce, four ounces.

7. Same as No. 6 excepting essence of ginger.

8. Same as No. 6 excepting four ounces essence lemon. One ounce cream tartar may be added to either No. 6, 7 or 8 with advantage, and a couple of sliced lemons to either No. 6 or 7.

White sugar, or a good article, adds much to the beer, and it will be found that the larger the quantity of sweetening, thoroughly fermented, the stronger the beer.

The Science of Papering.

The first thing, frequently, to be done is the removal of the old paper. To do this successfully, wet the wall thoroughly, and when well soaked, the old paper can be stripped off very quickly. After the paper is removed, wash the wall to get off all the particles of paper which may remain, and leave the wall till nearly dry before commencing to lay the new paper. If the walls have been whitewashed instead of papered, wash them with vinegar, which will make the paste and paper adhere more securely. A bench is easily made for measuring and cutting the paper, by placing boards of suitable length across two flour barrels. The paper should be unrolled and cut to proper length and in sufficient quantity to cover the room, before the pasting process commences. One edge of each strip should also be closely and neatly trimmed. These sheets should be laid one over the other, to be readily at hand when the paster is ready to begin work. The liability of turning the edges or damaging the paper will be greatly obviated by adopting this course. Flour paste is the usual article for the purpose, and rye flour is considered better than wheat, as it has more adhesion. Mix the flour in cold water, thoroughly, by stirring until the paste has a thin, creamy consistence, and then boil, when it will thicken, according to the length of time it is submitted to the heat. If found too thick in cooling, add boiling water till the desired degree of thickness is obtained; then add a little carbolic acid to prevent the paste from souring or becoming mouldy. A broad whitewash brush is the best to apply the paste with,

and the paper should be laid quickly after pasting, to prevent its becoming soft and tender to handle.

Two persons are required to lay on paper with rapidity, one to paste and one to apply the paper. When the paper is pasted it should be handed to the person on the ladder, who holds it about a foot from the top end, and lays it evenly against the wall at the top, allowing the upper end to hang over on the backs of the hands. By looking down the wall it may be seen when it matches the previously-laid length, and after adjusting to match, it should be brought gently to the wall, the backs of the hands then pressed against the wall and passed upward toward the ceiling, spreading them out toward the corners of the length of the paper. The scissors are then run along at the juncture of the wall and ceiling, making a mark which can be easily seen, when the top of the paper is removed for a little distance, and it is cut off even and replaced. Then with an ordinary clothes brush press the paper on the wall. Don't use a cloth, as it spreads any paste that may be on the edge of the paper. A cloth-brush is the *ne plus ultra* for laying the paper on the wall.

How to Finish up your Business

Stew around as much as you can before breakfast.

Find fault with your wife. Upbraid the help, and jaw the children. Don't permit yourself to be suited with the morning meal. On reaching your place of business, fume around because some trifling thing hasn't been attended to. Make it as warm as you can for your partner and he will probably reciprocate by making it warmer for you. Run out every half hour to get a drink and about the middle of the day chase round after delinquent creditors; the worst cases the better. Swear a little. Growl about the heat. Take another drink. Work yourself into a lather trying to get a full day's work out of your men. Wipe your face vigorously with your pocket handkerchief every two minutes. Get into a dispute on politics. Write dunning letters. Drink some more. Go home to a cold dinner and have your wife make it hot for you. Kick up a quarrel with your neighbor. Mope, growl, swear and drink until bed time, and spend the night fighting mosquitoes to save the expense of a musquito bar.

If by following the above rules faithfully you are not bursted in one year, it is nothing less than a miracle.

Trouble among the Cranberries.

The cranberry bogs of New Jersey have been attacked with a species of rot which has proved very destructive. After careful examination, Prof. Taylor, Microscopist of the Agricultural Department, reports that the trouble originates in an improper condition of the soil. In every instance where fruit rotted the muck proved to be undecomposed or saturated with sulphuretted hydrogen, thus proving the value of thorough drainage and the use of lime or the purpose of neutralizing the organic acid fermenting muck. On thoroughly decomposed bog muck, free of sulphuretted hydrogen, well sanded the Professor expressed the opinion, before examination, that rot would not be found. Subsequent observations fully established this conclusion, as he also did the fact that whereas sour lands, largely impregnated with organic matter, gave a matted mass of dark colored roots and but few fresh rootlets to sustain themselves—in some cases there was no healthy growth of the latter visible,—sweet or thoroughly decomposed soils, recently sanded, produced a large crop of white fibres well distributed with lateral rootlets and well fruited lateral branches. It will be noticed also that this theory corresponds with the generally accepted opinion that bogs which have acquired sufficient age with thorough drainage do not produce rot. From Prof. Taylor's examinations it is deduced that there are no fungi on the vines which produce decaying fruit; that rot is a disease caused by the condition rather than the exact character of the soil that soil which cause rot contain matted and dark colored roots of an unpleasant odor, that soils which are free from rot produce fine light roots and rootlets not at all disagreeable in their smell, that to cultivate successfully, the soil must be aided with sulphate of lime (land plaster) or air slacked lime and sand, or permitted to work its way to decomposition through the gradual and disengaging process involving more or less rot for a term of years, that the tendency towards a saccharine quality of fruit should be checked, and the natural acidity maintained by the application of fertilizers.

Keeping Sheep on Wheat Farms.

Every wheat grower possessing one hundred and sixty acres of land should keep at least one hundred sheep, and his farm should be so fenced that they may be changed from one field to another every two years. By this system his land may be kept tolerably free from weeds and always be in good condition for wheat.

My plan is this: I keep a flock of about one hundred and fifty, and every spring seed thirty acres with timothy and clover. The following spring my sheep and cattle are turned into this field, where they are kept two seasons, ploughing it up in the fall of the second year for wheat the next.

This field is now clean, and will produce large crops for three or four years. When I first commenced his practice, immediately after the war, my land was so completely overrun with weeds that it would not produce a paying crop, while the wild rose bushes were so thick that my hands and knees needed to be ase-hardened in order to stack it with any degree of comfort. I now get large crops of wheat on the oldest land, and there cannot be a briar found on the farm. The benefit to the land pays the keeping of the sheep, and I have the wool and increase clear profit. This year my flock sheared four and thirty-fourth pounds per head, and I produced between forty and fifty lambs. Every fall I sort out all the wethers over two years old and the old ewes, feed them three or four months and sell them for mutton, at generally from five to six dollars per head. I also sell from fifty to sixty dollars worth of mutton to the butchers during the summer, and can always have a supply of fresh meat for my own table at small cost.

Some seasons I have turned my flock into a field without seeding, using the plough wherever opportunity presented during the summer. This plan works well a so, and a field sowed in this way will produce as much wheat at the next year as it would in two years following without. When this plan is adopted, sufficient stock must be put on to keep the weeds from going to seed.

There may be better ways to "keep up" a farm, but the results obtained from my system are very satisfactory.—*Can. Farmer's Union.*

The Ingenuity of Chinese Mechanics.

There are no better carpenters, masons, or other and-craft men, more expert or faithful to their employers than the heathen Chinese. When a contractor engages to build a house, for example, he engages the premises, and sets up cooking apparatus, to supply his workmen with regular meals at the most economical rate. Having taken breakfast they work all noon, rest one hour, resume work, and leave off at five p.m., and return to their homes. On leaving, each takes a ticket, which admits him next morning. These tickets are daily vouchers of the artisan's presence. Counted up at any time a true account is rendered.

A man on the ground throws several bricks to another ten feet above, and he to another still higher. Thus the masons are supplied as they ascend with the material. Instead of carrying mortar in a hod, it is thrown by a shoveful one storey to another, to any required elevation, without spilling a particle, so exact are they by continued practice.

With a small brass wire, made tenso in a bow, notched in the lower side, they saw out artistically complicated puzzles, which are surprising specimens of their art. Thus they excel in many ways our most skilled artists, with very few tools, and those of the most and most primitive kind.

Hoe out Your Row.

One summer day a farmer's boy
Was hoeing out the corn,
And hoodily had listened long
To hear the dinner horn.
Then we come blast was heard at last,
And down he dropped his hoe;
But the corn man shouted in his ear,
"My boy, hoe out your row."

Although a hard one was the row,
To use a ploughman's phrase,
And the boy, as sailors have it,
Beginning now to "haze."
"I can," he said, and manfully
Again he seized his hoe
And the good man smiled to see
The boy hoe out his row.

The lad the text remembered,
And learned the lesson well,
That perseverance to a end
At last will nobly tell.
The cottage, now, as you can see,
And stricken with the blow,
In life's wide field of varied toil,
Always "hoe out your row."

A new Rail Fence.

A new form of farm rail fence has been introduced among us, which is being adopted by many. It makes a safe fence, and, so far as experience goes, a durable and economical one, as it contracts the old form fence amazingly. I believe in "contraction" of the old crooked rail fences; too much land is occupied with them, and too much rubbish gathers about them. This is a straight fence made of posts and rails, stakes, wires and stones. In the first place, holes are dug 11 feet apart, 21 feet deep; into these, posts are set; then a stone 12 or 15 inches in diameter is placed with the face side against the post, so that the rails will have a good bottom, close to the post. On these stones are laid two rails, one over the other. Stakes, 3, 4 or more inches thick, and long enough to reach from top of stone to top of post, are taken; one person places one end of a stake on the stone, close to the rails, while another encircles the stake and post, just above the rails, with wire, which is made fast. More rails are then placed between the stakes and posts, and under the top rail another wire is put. While this is being done, the person holding the stake should see that the rails are properly adjusted, and the stake drawn snugly toward the post.

The advantage of the stone and stake are: the stone is a continuation of support with the earth to the post, and the stake and stone act as a brace to support the fence. In building this fence, the posts should be set against the bank on the side of the hole where the stone will be; the stone should be placed on the leeward side to the prevailing wind. (If it is built in an east and west direction, place the stone on the north side, north and south, on the east side.) The stone will not settle so quickly or so much on unbroken ground. After the fence is built, a team and plough should be taken, and the fence banked up to the bottom rail, the furrows will be done to the posts. — *Washington County Gentleman.*

Sowing Plaster Rapidly.

One of the most tedious and disagreeable operations in the line of farming is the sowing of gypsum (or plaster). Recently I saw a plan of sowing this fertilizer new to me, and that was efficient and very expeditious. Several bushels were placed in the rear end of the wagon box; the sower sitting on a stool or, what is easier, placing his knees in the plaster, and facing the rear end of the box. As the team moves along, about ten feet from the fence, the sower fills his right hand with plaster, and throws it quickly to the left; as the body moves to the right, fills the left hand with plaster and hurls it to the right, and continues thus alternately. An active boy can, by this plan, sow more plaster in a half day than two strong men; and with a few moments' practice, sow it equally as even. If the ground is quite hard it will answer to sow plaster in this way on spring sown grain; but it is especially recommended for clover ground. A strip twenty feet in width is sown at each passage across the field, and is not necessary to sow in lands, but cross the field in any direction, so that the dust may not fly on the horses; the wagon tracks being a sufficient guide for the return trip. — *L. D. Swook, in Country Gentleman.*

How to Make Black Paint.

The most economical and satisfactory black paint we have ever used for iron-work was by mingling about two quarts of coal tar with a pint or a pint and a half of benzole, which was laid on with a paint brush. This makes an excellent varnish for rough work; it could not be recommended, however, as a fine varnish for any inside work.

Three years ago, the iron fence and iron balustrade and hand-rails on our front steps were covered with such a varnish, while the iron-work of adjoining neighbors had been painted every year with oil and lamp-black and varnish. At the present time, our fence looks much the best and scarcely needs painting, while their's really needs a coat of paint. A paint made of coal, tar and benzole will be found excellent for smearing the iron-work of farm implements. As benzole is somewhat volatile, no more paint should be prepared at one time than will be used immediately. — *Industrial Month.*

FOND OF MELONS.—The Central Union Agriculturist, Omaha, Neb., says:—"We will send the Agriculturist free for one year for the largest water melon left at our office this season."

Architecture.

Writers on architecture have always traced the gradual progress of the art from the hut to the palace. In old established countries, which have taken centuries to arrive at civilization, to thus trace the rise and progress of architecture is a work for the deeply learned, for it is only by searching among the scanty remnants of records in Latin and other dead or nearly dead languages that these traces can be recovered. Thus we learn from such ancient manuscripts the period at which glass was first introduced into England, and see that by its introduction one great foundation for modern architecture was laid, to be developed as years rolled by, and niches in reared by fresh outlets for trade and traffic with other nations, and even the rise and progress of steam as a motive power has to be tracked through some obscurity, and the claims of various men to its introduction have to be weighed by the evidence that is found in books and manuscripts, which are old when compared with the history of this country. But on this continent we can see with our own eyes the rise and progress of architecture. Our architecture, like our politics, is almost without a history. All has been done within our own or our immediate forefathers' memory. We can ride out a few miles from our cities adorned with buildings which will compare favorably with those of cities the records of whose foundations are lost in the mist of centuries, and see within a few miles the first habitations for man which the wilderness ever knew. The hut which first startled the bear and the wolf by its unknown aspect still exists, and that closely adjoining the palaces of our merchant princes. But inasmuch as architecture from the first is only one development of the natural instinct of man to make himself as comfortable as he can, it admits in every stage of examination and consideration; and it appears as if (taking this country generally) the time had arrived when, by the decrease of lumber and the increased facilities for its exportation to countries which are more destitute of it than ourselves, we ought to give up wooden buildings as a rule, and take, as other nations have done before us, to a more permanent material. With this view, we purpose giving our readers a few articles on the various modes of building, particularly on concrete, as being highly adapted for farm buildings in many localities. Ours being eminently a practical journal, we shall not go much into the history of the various styles nor discuss their particular merits, but give some plain hints and rules for economical building, so as in some measure to meet the wants of farmers, and enable them in some degree to become their own architects and builders.

VARIETY PICKLE. One gallon of a large finely chopped; ½ pint green peppers; 1 gallon green tomatoes; 1 quart onions (chopped fine and the juice drained from them); 4 tablespoonfuls of ground mustard; 2 of ginger; 1 of cloves; 2 of turmeric; 1 oz. celery seed; 2 pounds sugar; a little salt, and 3 gallon good cider vinegar. Mix well and boil 20 minutes. Anything like snaps or cucumbers can be chopped in before boiling. Gentlemen think this pickle very fine.

A FARMER, who was pestered with crows, hit upon the plan of soaking some corn in whiskey and placing it in the field so that the crows would get drunk, and then he could easily close on them. After soaking some corn all night, he put a bountiful supply in the field early next morning, and in about two hours he went out to see how things were progressing, and mark what followed. One old crow, a little larger than the rest, had gathered up and taken possession of all the soaked corn, and had built himself a bar out of some clods of earth, and was retailing the whiskey-soaked corn to the other crows, charging them three grains of sprouted corn for one soaked grain. He hadn't the gall to kill creatures that acted so much like human beings.

REMEDY FOR BARRENNESS IN PEAR TREES. A correspondent of the *Southern Cultivator* says: "I once had a pear tree of good size, and old enough, but it did not bear. On meeting an old gentleman whom I knew gave some attention to such things, I asked him what I should do with a barren pear tree. Said he, bore an auger hole (say 1 inch auger) through the body of the tree, one foot above the ground, and drive a seasoned white oak pin, filling the hole well; trim off nicely on both sides. I did so and had plenty of fine fruit thereafter. I also (as an additional remedy) drove a handful of nails into the tree, but whether that contributed to its fruitfulness I can't say."

TO TAN SKINS.—The following method is recommended: Take equal parts salt, alum, and Glauber's salt, and half a part saltpetre; pulverize and mix. Handle the skins and rub the mixture in well three or four times a day—the oftener the better. If there is not moisture enough in the skin to dissolve the salts, put a little water into the latter. We are assured that no moth will attack furs the pelts of which have been thus prepared.

WASHING CLOTHING.—The use of soda for washing linen is very injurious to the tissue, and imparts to it a yellow color. In Germany and Belgium the following mixture is extensively and beneficially used: 2 lbs of soap are dissolved in about 5 gallons of water as hot as the hand can bear it; then is added to this fluid three large sized tablespoonfuls of liquid ammonia and one spoonful of best oil of turpentine. These fluids are incorporated rapidly by means of beating them together with a small birch broom. The linen is then soaked in this liquid for three hours, care being taken to cover the wash tub with a closely fitting wooden cover. By this means the linen is thoroughly cleansed, saving much rubbing, time and fuel. Ammonia does not affect linen or woollen goods, and is largely used as a washing liquor in the north of England.

AT THE annual dinner of the members of the Penrith Farmers' Club, the secretary read the report, which after detailing the work which the club had performed during the year, concluded with the hope that

Yours sheep on the hills and your swine in the sty,
Your crops of potatoes, wheat, barley and rye;
But if some misfortune should cause you to sigh,
Such as seeing your turnips cut off by the fly,
Or prices be falling and wages rise high,
Will keep up your spirits and never say die.
And now your committee may wish you good bye,
And hope you will say the report's "all my eye."

WICK UP this good advice: If you get a moment to spare, spruce up; put the gate on its hinges; put a little paint on the picket fence you built last year; trim up the door yard; make it cosy and inviting. Do not say you can find no time to attend to these things. The fact is, you have no right to be slovenly. It can do you no good, but on the contrary, it will mar your peace, wound your self-respect, and impair your credit. Then, by all means, spruce up a little, at odd times and at even times too, for that matter. It will make you feel vastly better, and maybe a trifle proud of your pretty homestead. Your wife and children will be made happier for it; your neighbors will be enriched, beautified and blessed by it; and your farm will be worth more money in the market, and of greater value to you at home, if you spruce up a little now and then.

PIE PLANT PIES.—Never stew your pie-plant before making your pies. Peel the stems of rhubarb and slice them in half-inch lengths, holding several stems in the hand at one time. With these fill the pie, sweetening it generously—about the same as for a lemon pie, a small teaspoonful of sugar for a medium sized pie—moisten with a great spoonful of water, dust over this a little dry flour, to thicken the juice a little, cover it with the upper crust and bake it slowly and thoroughly. Such a pie is too rich for some stomachs, and there is a way of dispensing with part of the sugar without having the pie too sour. Not by the use of soda? No indeed. But pour boiling water over your sliced rhubarb, letting it stand ten or fifteen minutes. Pour this off and make your pies of the rhubarb, with less sugar. If you stew pie plant for sauce, you can pour off a part of the juice before it is done, using it to make jelly if you like, and supply its place with more water, thus economizing sugar.

SOIL FOR VERBENAS.—I have been not a little amused at the dogmatical directions issued by some persons as to the necessity of a fresh soil yearly being necessary to grow good verbenas. It is all a sheer absurdity, as my practice and observation of over a quarter of a century has taught me. The verbenas takes very little from the soil, its food is gathered mainly by its foliage; but to supply that, the soil must be deep and permeable to moisture and air, so that after a dry, hot day or season, moisture or food, by reason of capillary attraction, may be distributed both to the roots and the foliage, the underside of the latter always having its mouth open for absorption. An old bed deeply dug and supplied with some vegetable substance to decay, at from ten to twelve inches below the surface, is just as good to grow the verbenas as new fresh soil. — *Atch, in Rural New Yorker.*

A little nonsense now and then is relished by the wisest men.—Butler.

The privilege of talking and even publishing nonsense is necessary in a free state.—Coleridge.

GOOD FRANK, for Peter's sake, do not blow on the ashes to this pot. Most be the hand that festers them hit, And curst be he who lifts the lid.

"We find," tellingly remarks an Indianapolis editor, "tyrt we can Get oxt ovr pepar without the aid of af ony of thase besky oniu combositors."

If THERE is one time more than another when a woman should be entirely alone, it is when a line-fal of clothes comes down in the mud.

A LITTLE BOY carrying home some eggs from the grocery, dropped them. "Did you break any?" asked his mother, when he told her of it. "No," said the little fellow, "but the shells came off."

"MAMMY, BRING MY LITTLE KITTEN" is the title of the latest piece of music out, to be followed by a still more pathetic piece entitled, "Daddy, have you Drowned the Puppies?"

Don't lay me on the river bank Amid the fragrant flowers, Nor where the grass is watered by The early summer showers. But put me in cremation's range, And open wide the dumper; And then my vaporous remains Can up the chimney scamp.

If YOU WANT to find out a man's real disposition, take him when he is wet and hungry. If he is amiable then, dry him and fill him up, and you have an angel.

THE MOST untalkative person seldom fails to make a few remarks when with bare feet he steps on carpet tacks at two o'clock in the morning.

"O, Lord," prayed a Methodist minister, "keep me humble and poor!" "O, Lord, if Thou wilt keep him humble," said the deacon who next prayed, "we will keep him poor."

TOWN DRUMMER OF DUNDEE IN 1650.—The following notice is a verbatim et literal copy of an announcement made by that useful functionary, the Town Drummer of Dundee, in 1650. We consider it would be a sin and a shame to translate it. As a specimen of "guid braid" Scotch of the olden time it is unique:—"Tint yostreen, some wai o' the caustie, a knave little an, risin thre tomands auld; the kerouff o' his ouytie skilaret black an' kytlum w' bubbles, an' has a swass w' his korrie o'o. Wha-ovor has fun' him will mak me the wisor, or his daddie the shishin merchant i' the horse wyn, and they 'll get a bunnie for their fash."

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