

FARMER'S ADVOCATE

AND HOME MAGAZINE

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THE FARMER'S ADVOCATE AND HOME MAGAZINE.

WILLIAM WELD, Editor and Proprietor.

The FARMER'S ADVOCATE is published on or about the 1st of each month, is handsomely illustrated with original engravings, and furnishes the most profitable, practical and reliable information for dairymen, for farmers, gardeners or stockmen, of any publication in Canada.

Impartial and independent of all cliques or parties, the FARMER'S ADVOCATE aims to present to the farmers of Canada with an unbiased judgment the agricultural news of the day. Voluntary correspondence containing useful and seasonable information solicited, and if need, will be liberally paid for. No notice taken of anonymous correspondence. We do not return rejected communications.

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Our Monthly Prize Essay.

Our prize of \$5.00 given for the best essay on the comparative advantages and profits of *Summer and Winter Dairying*, has been won by J. B. Bessey, of Georgetown, Ont., and appears in this issue.

A prize of \$5.00 will be given for the best essay upon *The Advantages of Maintaining Township Exhibitions*. [On account of the many exhibitions the time for receiving this essay has been extended to the 15th November.]

A prize of \$5.00 will be given for the best essay on "*How Many Successive Crops of Green Fodder can be Raised in one Season.*" The essay must comprise the most suitable crops for both light and heavy soils, yield to be expected, and method of cultivating, and must be handed in before the 15th of December next.

The Farmer's Hand-Book for 1884.

Seeing the necessity and utility of farmers having a convenient Hand Book properly prepared in which they can enter the daily transactions of the farm, the purchase and sale of their products and requirements, and a register of their stock, we have prepared a book that we believe will be of very great convenience and advantage to them, and will be a source of pleasure and profit to every one who uses it, and an article that will pay its cost an hundred fold. The price of the Hand Book will be placed at only 25 cts., and every one of our subscribers may have one sent to them when they send for the renewal of their paper to this office. If they are not entirely satisfied with it, they may return it within one week and have their money refunded, less the cost of postage. This book enables any farmer to keep a correct record of his farm operations

I am very much pleased with the ADVOCATE, and am persuaded that every thoughtful farmer would be profited by reading it. J. W., Newport Landing, Nova Scotia.

By the Way.

Build an ice-house and be ready. Never suffer your stock to suffer. It is well to save your own seeds. Provide good fuel for ye gudewife. Only careful help to care for stock. Sell or fatten poor, scrub animals. Is your cellar warm, yet ventilated? Now put the implements under cover. Have water in the yard for your stock. Time to begin feeding stock regularly. Miss no Farmers' Club meeting this season. Where sawdust is used for bedding the manure is considered as very good for celery.

A light sprinkling of lime upon potatoes when stored is an excellent preventative of rot.

After cleaning and oiling harness apply gum tragacanth, and it will be as bright as new.

Keep hens quiet and well fed if you wish to fatten them, but make them scratch for their living if you desire eggs.

To make cloth waterproof apply a strong solution of soap to the wrong side of the cloth, and when dry wash the other side with a solution of alum.

When grooming a horse give as much care to the feet and legs as to the rest of the body. Horses should not be allowed to stand in filth and dampness.

It is even more necessary to keep sheep dry under foot by a sufficiency of litter than to protect them by roofing. They should never stand or lie in mud or water.

Tin vessels so worn that the iron is exposed are not fit for use in the dairy, and should be discarded. Sour cream will be unpleasantly affected by remaining in contact with the iron.

Early Beef.

The most extensive cattle-feeder of Illinois, Mr. Gillett, says it takes an immense capital to carry steers until three years old, before being properly fitted for the shambles; and for one, he has now done with it. He will dispose of his present three-year-olds this fall, and never rear another lot to this age. Hereafter he intends to keep his calves fat as they grow up. He will induce them to eat oats and grass before weaning, so that they cannot fall away in flesh when taken from suckling the cows. He will continue the oats and hay in winter until they can digest corn well, and then give them plenty of that. By this system of feeding he can bring his high grade Shorthorn steers up to 1,500 pounds at twenty to twenty-eight months old. Young cattle take on flesh and fatten much faster previous to attaining the age of two years than at any subsequent period. In consequence of this there is considerable profit in pushing them up with plenty of feed thus far, rather than allow less feeding, and keep them on till three years old. Beeves of 1,200 to 1,500 pounds weight are now preferred, both in the American and English markets, to those older, for their meat is found to be more tender, juicy and savory than that of older and heavier cattle.—[A. B. Allen, in New York Tribune.

I like your paper very much. It is just what every farmer ought to have. K. TALBOT, Georgeville, P. Q.

Editorial.

Look to the Public Roads.

Now is the time to find any defects in our roads and where repairing is most needed. At the time of the year—mid-summer—when statute labor is performed, often gravel is misapplied for the want of just knowing where the bad places are, and when wet weather and winter sets in the work is found to be only half done. On the whole sufficient attention is not paid to keeping up good roads. The statute labor system is sadly deficient, and the work every year is almost thrown away, and leaves the roads in about as poor a state as if nothing had been done. Good roads are everything to a farmer; and just when the heaviest part of his work has to be done, when he markets his grain and other produce, and draws cordwood, the roads are in the worst condition. Those who live any distance from a market are compelled to wait until sleighing sets in, or dry weather comes again, before they can turn their produce into money. Besides this, look at the loss to the community at large in horse flesh, wear and tear of wagons and harness, in travelling on bad roads. Money can never be better laid out than for the improvement of public roads; and we do not think that farmers would object to paying higher taxes in order to have clean, dry roads. But to have dry roads better drainage must be had—this is essential to all road making—and this is where our roads are mainly deficient. In some sections of a road efficient drains may be dug, and in the next there is no connection. There is no use digging drains along our public roads unless provision is made for an outlet, and this probably has to be made through personal property, the owner of which may not feel inclined to dig a ditch to let off this surplus water. The consequence is it stands in the ditches without any outlet. Again, there are places where it is better to have no water course, and along other roads where the drain should be only on the lower side. To level all roads on the same principle will not do, and hence competent engineers, or experts, should be employed to superintend our roads, and not leave it to the hap-hazard and unsatisfactory judgment of pathmasters. The great fault in our roads is not supplying the proper material, and at the proper time. What would be the use of, say, tumbling a lot of clay on a road during the fall rains, when it would stick to a wagon wheel like glue, and never get compact? There is not much use anyway of piling up on the centre of a road large heaps of clay, unless it is covered by a hard deposit of sand and stone. The tenacity of clay can never make a road fit to travel upon when moisture comes in question; the weight lifted in, say six inches deep of clay, by a span of horses weighing twenty-two hundred pounds, followed by a lumber wagon, would be four times that which could be drawn on a smooth, gravel road. Since horses are so dear, good roads should form an important factor, and should be allied with good horses. Sandy roads will take care of themselves, with regard to drainage; clay is where the trouble comes in, and besides having them properly drained and levelled, there does not want to be only a top-dressing of sand and muck, which is generally found, but a first-class gravel—or broken stones; this is essential to make a hard bed. Good roads are what we want, and they will pay, and it should be recollected that as there is increased travel there should be a consequent enlarged outlay of public money; and we should certainly recommend, instead of the antiquated system of pathmasters we have, a competent supervisor to attend to our roads, culverts and bridges.

One of the greatest drawbacks even to our macadamized roads, is that they are allowed to run in ruts and deep holes in the centre, no matter how efficient the side drainage may be. The centre of the road should be kept level, and the ruts filled up. For the want of this every rain makes a slushy road. At a small outlay the roads could be kept level by the use of say a heavy roller, and continually filling up with good screened gravel.

Farm Work.

There is an endless round of farm work. It appears never to be done—that is, on a well regulated farm. But on a great number of our farms the minor details are often sadly neglected, and the work done in a slipshod manner. There are plenty who will rush through harvest, and dash off their fall plowing and suppose then that all the work is done, forgetting that there are an infinite number of small jobs that require to be done. There are farmers who make a boast of getting through seeding sooner than their neighbors and of always being ahead of somebody. This is laudable, but at the same time these fast men are often found woefully neglectful of small things. It is an old saying—"Take care of the pence, and the pounds will take care of themselves." So with work—attend to the details, the smaller jobs and larger ones will take care of themselves. There is always a quantity of spare time on the farmer's hands, which can be profitably employed in fitting up—such as repairing fences, barns and out-houses, getting fields into shape and gathering stones, looking to drains, &c., &c. In consequence of neglect in these matters, farms soon assume a shabby appearance, and things go to wreck for the want of a little work. On the majority of farms in Ontario, the fencing and the shape of the fields are anything but good. The old fences that were first laid when the country was cleared, are rotten and are tumbling down, and the way the woods have been cut down there is no rail timber left, or not sufficient to re-fence a farm. From year to year the fences have been allowed to go down, without any attention to repairs, until they have nearly all fallen down.

Instead of trying to aim at too much in repairing and putting things in order, the work should be done by piecemeal, and done thoroughly. Let a field, for instance, be taken hold of and put in proper shape and fenced this fall, and some other work the same way, such as repairing buildings and out-houses. By this system of doing work well, everything about a farm will have a presentable appearance, and the work will not have to be done twice.

There is very little economy practiced with regard to fencing, as a general rule, and this should be looked at more than it is by our farmers. If you look at the majority of farms you will find the same division of land into fields that was a quarter of a century ago, and even further back; and as far as can be made convenient, the different fields should be composed of a uniform quality of soil. A field that is partly heavy and partly light soil, or some of which is on high and some on low ground, is rarely the best for any crop, and the different parts, if not fenced off, should at least be cultivated and cropped by themselves. There is a great amount of money lost every year, in the shape of valuable land and productions, by not having proper and conveniently fenced fields. It is not unusual to see corn in shock, turnips, fall wheat and aftermath in the same field at this time of year, and the pasture in this field is completely lost.

There is no better time of the year for remodeling, repairing and doing small jobs than the pres-

ent. "A stitch in time save nine," so goes the adage, and certainly no better outlay can be made on a farm than keeping things in order, and not despising the day of small things.

Harvesting and Storing Turnips.

It was contended by a prominent English agriculturist that the success of stock feeding in that country depended upon the turnip crop, and when it is considered the acreage that is grown every year compared with the other productions, there is a great deal of truth in this assertion—although objections have been made by prominent agriculturists in this country to the effect that the percentage of solid or feedable matter is so small compared with the amount of water (100 lbs. of turnips contain 88 lbs. of water) that they are not worth growing. This is the argument. Now, grass, which is considered to be the best of all feeds for rapid development, contains 90 per cent. of water, so it is evident that the substances which contain the largest supposed amount chemically of carbo-hydrates and nitrogenous substances, are not practically the best feeders, or give the best results.

Under certain conditions of the human system lettuce may prove to be more nutritious than beefsteak, and so on with the rest of feeds. Turnips at once act as a tonic laxative and diuretic, and contain a proportionable amount of starch and gluten. For a country like Canada there should be a greater preference for this crop than there is, when we consider the great advantages resulting from feeding stock, and the accompanying benefit resulting from a thoroughly cultured turnip crop. This year the crop is far below an average; there was not a large acreage sown, and owing to the unpropitious season of early continuous wet, and subsequent drouth, the crop is not good. Indeed 40 cents per bushel is asked on our markets for a respectable looking Swede turnip; and prominent breeders and feeders are advertising for wholesale lots, thus showing that the cultivation of this crop has been neglected. It appears that the cultivation, harvesting and storing of this tuber has been looked upon as too much work at the present rate of wages and labor; but this is false economy; there is no crop that can be more easily handled if proper measures be taken. Of course, in England and Scotland, the great centres of turnip-growing, they have machines which effectually top and root them, and prepare them for putting into the cellar or winter quarters. The machine works admirably, and a crop of turnips can be harvested with the same ease that a crop of hay can be got in. The only means as yet adopted in this country for harvesting a turnip crop, is either to use manual labor, such as topping and rooting by hand with knives, or using a hoe or mattock for the same purpose. Outside of a root and topping machine, of which we have none in this country, hand pulling and topping—throwing four rows in one and the tops in the centre, is the expeditious and clean way; your windrows are all ready, and you make a gain in drawing in.

Storing turnips is an easy matter. They are hardy, and it takes a severe frost to permanently injure them. The starch and saccharine matter contained yield slowly to chemical action. Turnips may be frozen hard, and by proper attention to temperature—not suddenly thawing—no injury to the tuber is perceptible. Pitting turnips and dragging them out during winter months is a doubtful expedient. It don't pay. However well they may be secured from frost at the start, by continual draughts and opening the pits they will be frozen. Roomy cellars are the places where

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turnips should be stored, of easy access. It does not pay to handle turnips, especially in the winter. A temperature of about thirty-two to forty-five degrees Fahrenheit will keep turnips sound until May. If turnips are kept in a warm cellar during the winter—say above fifty degrees—the bulb commences to sprout or growth is excited, and the consequence is before spring it turns soft and loses the greater part of its nutriment. Turnips do not want to be frozen; but better to be below and on the freezing side, than too warm.

Agricultural Education.

There is a disposition on the part of nearly all civilized governments to foster agriculture and agricultural advancement by means of a higher education of farmers' sons, as the production of the first necessities of life is what national prosperity depends upon. The world is going apace in the arts and sciences; commerce and manufactures are making rapid strides, and it is an age of progress in every department of life. The ox-cart of our fathers will not do now, and the reapers, hooks and scythes have been superseded by self-binders. In all this advancement the potent factor is, and has been, *intelligence*; all great results and improvements have been brought about by this; to say this is almost axiomatic. Intelligence produces the same results, whether in the workshop or the farm; but education of the one is not fitted for that of the other—these require a special knowledge and training; every man to his trade. Besides a farmer requiring a general education as a citizen of the world, it is necessary that he should have a special education the same as those who are fitted for law, medicine, or any of the trades. Indeed, so broad is the scope of what knowledge should be, that it has no end. Look! He has the whole domain of nature to deal with in the animal and vegetable kingdoms, including the broad sciences of chemistry, botany, the breeding and diseases of animals, entomology (insect lore), and kindred sciences. With this a successful farmer requires to know something about political and domestic economy. There is no doubt a man can make money on a farm who is not versed in any of the so-called sciences; he may work by the rule of thumb and do well; he may do, but the chances are ten to one that the active, educated farmer will win and be successful. What we mean by an *educated* farmer is not the cramming into a young man's head a lot of book learning out of scientific text books—theory without practice. The *ADVOCATE* has always contended for advanced education for farmers, and a higher class of farming. We think that great good can be done by Experimental Stations and Model Farms in teaching and disseminating agricultural knowledge, if economically and practically conducted, so that the results will show that intelligent farming can be made profitable. Here is where the rub is—making farming pay. If there ever was a time when educated farmers were needed, it is now, especially in the older settled districts of Canada. There is a great strife between capital and labor. Our older lands are becoming gradually depleted of their virgin fertility; plant food is scarce. The Ontario farmer, for instance, has to compete in the markets of the world with the great Northwest, with its millions of acres of rich organic soil; with the expansive States and Territories of the American Union; with the large continental island of Australia; with the extensive wheat belts of India, and the heavy exports of productions from Russia. All these, as steamboat and railway communications are opened up, are pouring their productions into the marts of the world, and all are competi-

tors. That brains—education—and capital have to be depended upon for a successful farmer, is at present evident. Look at the power of capital that is invested in some of the western cattle and sheep ranches; and again, wheat farms, like that of Dalrymple's, where everything is conducted with the same precision and method as characterize any other business. The conditions of farming are altogether changed from what they were even a few years ago, when the country was settled; it was labor then—now it is intelligence, and the consequent proper use of capital in farming. Farming now is commenced to be looked upon as not merely a life of drudgery, and farmers as hewers of wood and carriers of water, but as a business, and even as a speculative business; for capitalists, like Dalrymple, find that they can make a surer investment to buy land and raise wheat than in any other business. But then it requires intelligence and method, and educated men to superintend the affairs.

The necessity of having thoroughly trained and educated farmers is becoming so apparent that, as we said before, nearly all governments are moving in the matter, considering that a more general study of the science of agriculture will prove of the utmost importance to those engaged in farming. In Germany agricultural sciences are taught and form a special study from the lowest graded school to a university course. In England and Scotland, too, certificates of merit are granted for proficiency in subjects pertaining to the science of agriculture. This is right; and we are pleased to see the Council of the Agriculture and Arts Association of Ontario have proposed a scheme for the encouragement of a higher agricultural education. They propose to grant certificates—2nd and 3rd—to those who pass through a curriculum of studies prescribed by the Minister of Agriculture. The examination is free to all, whether they attend a Model Farm school, college or not. The examinations are to be held at the same places, and subject to the same rules, regulations and supervision as the High School examinations of July next. Besides the granting of certificates, ten prizes ranging from \$30 to \$15 are given to candidates obtaining the greatest number of marks.

The object aimed at is, no doubt, good; it is to advance agricultural education and to stimulate a taste for reading and the acquisition of valuable information on the science and most approved methods of farming.

On the Wing.

THE DOMINION EXHIBITION OF 1883.

This Exhibition has been the only one we have ever attended worthy the name of Dominion Exhibition. It has been a grand success, and the inhabitants of St. John deserve great credit for the enterprise, generosity and spirit evinced in setting such a pattern for others to follow. St. John has not the population, the wealth, or the amount of Government patronage that some of our western cities can command, but she has shown an example worthy of being copied by some of the owners of riches in the West; for instance, a wealthy merchant, Mr. Manchester (of Messrs. Manchester, Robertson & Allison), of St. John, N. B., being desirous of improving the butter products of the country, had, at his own expense, engaged Prof. J. P. Sheldon, of the Agricultural College of Salisbury, England, one of the leading dairy authorities in England, to come to this Exhibition and give an exhibit of the latest appliances in butter making now in use in Britain, and to give addresses and instruction on the subject in Canada. A large space of the horticultural buildings was fitted up for the display of

the utensils and for a lecture room, and as this had been well advertised, it drew a large concourse of farmers and their wives daily to see the appliances and hear the addresses, great interest being evinced in this department. Mr. Sheldon is a very pleasant speaker, and has awakened a great deal of thought upon this important branch of our industries, especially among those who have not had an opportunity of seeing the new process or reading about it. The cans for the different methods of setting milk were on exhibition and explained. The perpendicular and horizontal barrel churns were exhibited. The butter was churned in the perpendicular churn and was made up before the gaze of the spectators. The principal feature shown was the working of the butter in the globular state, and manipulating it by means of paddles instead of using the hand. The Laval centrifugal machine was exhibited in motion, but owing to some slight defects in the motive power, it did not separate the cream from the milk when we were there, and we watched it closely every day we attended the Exhibition. We do not consider the churning or the manipulating of the butter as shown at this Exhibition to be equal to what we have witnessed at the Kirkton Creamery in the county of Perth, which was described in this journal two years ago, or at Montreal, as described this year. In another part of the Exhibition there was the Danish centrifugal machine in operation, which separated the cream from the milk in an efficient manner. It was exhibited by Prof. Barre, of Montreal, and Mr. W. H. Lynch, of Danville, P. Q. It was a much superior and more complete implement than the one exhibited by Prof. Sheldon, but the cost is much greater. Mr. Barre has been employed by the Quebec Government to give instruction in butter making in that Province, where they have already five creameries using the centrifugal machine for separating the cream from the butter. The principles have been previously explained in this journal. Mr. Lynch was at the Exhibition. We believe he is preparing a publication on the butter question under the auspices of the Ontario Government.

There was a very good and large display of live stock of excellent quality. The stock on an average was not in as high condition as is generally to be seen at our large western exhibitions, although a considerable quantity exhibited showed that liberal feeding had not been neglected. The Government Stock Farms of Prince Edward Island and of New Brunswick strongly contested for the honors against each other; both carried off a large number of prizes, much to the chagrin and disappointment of the practical farmers who had brought their stock to the Exhibition. Loud and grievous were the complaints about this. It is a debatable question whether the Government stock of the different Provinces should compete for prizes at exhibitions; also whether the Government sales of stock are checking private enterprise. The stock exhibited by the two Government Farms did credit to the feeders, but they would not have carried off so many prizes had some of our best Ontario breeders exhibited. But the latter would not take their stock so far; in fact, some of our best breeders do not even exhibit at our Ontario Provincial Exhibition, although they hold stock that could not be excelled at any of the exhibitions.

At this Exhibition a few Polled Norfolk cattle were shown, the only cattle of that breed we have seen in Canada. There was exhibited one Holstein bull, a much larger and finer animal than any of that class that has been shown in Ontario. There were working oxen exhibited that would have taken the prize in Ontario; but what surprised us most was the large numbers of

Jerseys—some remarkably fine animals, too; for instance, there was a large, solid colored Jersey cow, having good points, good pedigree, and a body well formed, straight back, wide brisket, showing a strong constitution; she was in milk and her milk veins were very prominent—in fact, she was the largest and best developed Jersey cow we have ever seen, such as a judge of a Shorthorn, Hereford or Galloway would not have looked at twice before giving her first prize. But the judges of Jerseys do not look so much to the symmetrical points of an animal, or the beef-making qualities, as they do to escutcheon and yield of milk; the quality and quantity of milk are the crowning points in their estimation. Many a noted milker is but a very inferior looking animal in the eyes of the butcher. This remarkably fine cow deserves attention, as we saw some of her stock, and faultless animals they appear to be, and we know that the appearance of an animal must have weight among many Jersey breeders. We hope to refer to this stock again, as it is our opinion that some Jersey fanciers will aim for size, form and docility, and an animal that tends to fatten is generally docile. We did not meet any of our Ontario stock men at this exhibition, and only one or two from Quebec. W. H. Rodden, of Plantaganet, took some Ayrshires and was successful both in the prize ring and in sales.

Implements were shown by agents, but many of our leading manufacturers were unrepresented. We believe that fully one-half the implements on the ground were shown by Messrs. Johnston, of St. John. There is an opening for some of our western manufacturers to effect sales in the Maritime Provinces, which would be of advantage not only to themselves, but to the farmers in those Provinces. The Machinery Hall was interesting, and the manufacturers of cotton and silk goods were better represented than at any of the western exhibitions.

In addition to being the Dominion Exhibition, it was called the Centennial Exhibition, as it is 100 years since the founding of St. John.

The display of grain was much better than we expected; in fact, we thought it superior to the exhibit at our principal western fairs this year. In some vegetables and roots they excelled our exhibitions, more particularly was this noticeable in potatoes, and the display of apples from Nova Scotia was such as would rival, and, perhaps, surpass that of any State or Province on this continent. We are not aware whether British Columbia contributed anything. Ontario was very poorly represented, and Quebec not much better; but Manitoba made a varied and magnificent display, by far the finest we have ever seen from that Province, both the quantity and quality being excellent, and very nicely arranged, reflecting great credit on the collectors and the arrangement. The grapes, grain, roots, the soil and the vegetation of Manitoba were viewed with intense interest by the thousands that visited the exhibition, for many would not credit there could be such a fine display made. This and many other parts of the exhibit deserve more extended notice.

On our return, between Campbellton and Riviere du Loup, in the Province of Quebec, we noticed that the fields of grain were principally cut and lying in small bundles ready to be tied into sheaves. In some fields we saw several men, women and children reaping the grain with reaping hooks; some of the reapers work on their knees. Some of the grain was still green; it consisted of oats and wheat principally. This was on the 8th of October. The crops in the Maritime Provinces had been secured, and ours in the west had been in our barns a month ago.

AN ARBOR DAY.

Ere we close these remarks we must particularly impress on you one great, and, to us, novel departure in connection with this exhibition, one that we hope to see copied and followed up by every Township, County, Provincial or Dominion Agricultural Society in this Dominion, that is the appointing of an Arbor Day in the fall of the year. The inhabitants of St. John have set us the example. On one day of this exhibition large numbers of trees were planted in one of their parks, and in other parts of the city. Farmers, let us all take up this plan, let us have an Arbor Day in the fall, when we have time; let us plant some trees every fall; if we have not done it then we should do it, even in a more hurried time in the spring. This winter you can discuss this plan, to be acted on in future.

THE PROVINCIAL PLOWING MATCH AT ESSEX CENTRE.

There have been four plowing matches under the auspices of the Ontario Board of Agriculture and Arts this fall. One being held at Essex Centre, and not having previously visited this section of the country, we availed ourselves of the opportunity and attended. There were about forty entries in the different classes. The land was in fair condition, and the work done was on the whole very good, some as good as we think it possible for a plow to do, that is, to leave an even crown on the furrow and a nice looking ridge. Of course the judges must award the prizes for the best work. The plowman that can do such can plow ground to raise crops. Nearly all good plowmen are aware that land plowed for a prize will not raise as good a crop as land plowed in the ordinary way, because it is not as evenly turned. A few thoughts occurred to us when walking over the ground: Would it not be as well to award the prizes in such a manner as to bring out the plows that are in general use among the farmers? The old Scotch plow, with its long handles, long mould boards, peculiar coulters, &c., are the plows that will make the prettiest work, although not the best for the land or the crop. In fact the implements used for prize plowing are not such as are made by our principal manufacturers. It is well to show what can be done by a plow, but would it not be well to alter the regulations respecting plowing matches, so as to admit of the implements in general use being able to compete, when it is a known fact that the work done by the short plows, although it may not look as well on the crown, yet it would produce better results than prize ridges will? The old rules have been formed for old plows; should not new rules be formed to suit the new ones? There were no sulky plows on the ground, yet they are now being made by several manufacturers, and are destined to come into general use on good farms. Would it not be well to divide the money now offered, or raise a little more and exhibit subsoil and mole plows, both of which, we believe, would be highly beneficial in many parts of Canada, and a prize offered for such might bring these implements before the notice of farmers? It is also our opinion that an increased benefit would result, and a greater interest excited, were other land working implements exhibited in operation on the ground.

Messrs. S. White, L. E. Shipley and R. Hunter, members of the Board of Agriculture, superintended the trial; Mr. M. Jones gave them much assistance. We regret the necessity of leaving ere the pleasant proceedings were finished. The following were the successful competitors:—

Class No 1—Open to all—Robert Simpson, Leamington, \$40; John McDermid, Ridgetown, \$30; John McGarvin, Chatham, \$20; John Steele, Chatham, \$15; John Collison, Leamington, \$10; David Hodgson, Ruthven, \$5.

Class No 2—Open to those who had never won prizes at a provincial or county match—John Tape, Ridgetown, \$30; Chas. Johns, Chantry \$25; A. Shellington, North Ridgetown, \$20; Wm. Kline, Essex Centre, \$15; Dan Fields, Windsor, \$10; George Gammon, Chatham, \$5.
Class No 3—Boys under 18 years.—Geo. Danton, Woodlee, \$25; Jas. Headrick, Woodlee, \$20; Wm. Phillips, Essex Centre, \$15; Wm. Croft, Maidstone, \$10; James Waters, Essex Centre, \$8; Wm. H. Willer, Chatham, \$5.
Class No 4—Skimmer plows—George Rymal, Leamington, \$25; Martin Turberry, Leamington, \$20; John Robinson, Essex Centre, \$15; Joe Robinson, Essex, \$10; Wm. D. Beattie, Essex Centre, \$8.

Essex Centre is a station on the Canada Southern R. R., in the County of Essex, 17 miles from Windsor, and a little over 100 miles from London. The land is a strong, fertile clay. The county is flat and requires a systematic draining to enable it to produce to its full capacity. When that is done we shall have no land of more value, as this is our most southern county. Peaches and grapes now grow along the lake shore, where the land is better drained.

SORGHUM SUGAR.

Close to where the plowing was done is a large building about 40x50 and 30 feet high, which has been erected by Mr. Wright, a gentleman who has been engaged in sugar making in Cuba. This building is for the manufacture of sugar on a large scale, and is being fitted up with all the most recent appliances, in fact it is the first one of the kind ever erected on such a complete scale in Canada. Mr. Wright feels satisfied that sugar can be made profitably from sorghum in Canada, and has devoted his time and means to establish this factory. The mill should be running at the present time, but some of the arrangements are not yet complete. This gentleman has planted 30 acres of sorghum this year, but the season has been unusually wet, and the land being low, the crop is not what it otherwise would have been. We shall be pleased to record the success of the establishment, as this may be the precursor of a great and lucrative interest to us. There are several small establishments now in this vicinity making syrup, and it is our opinion that even in this stage the business will expand, and that farmers will, in many localities, make their own sweetening, either as syrup or sugar. The former can be made at comparatively little expense, but to convert it into sugar requires skilled labor and expensive machinery.

From this part of Canada large quantities of hickory, ash, elm, oak, etc., has been, and is now, being shipped to other parts of Canada and the States. This class of timber indicates good land. The villages and farms show evidence of progress; draining is being carried on, large mains are being made in some localities. Land has rapidly increased in value since the Canada Southern Railroad has been constructed through this part of the country.

New Method of Washing Butter.

A new method of washing butter has been patented in Germany. As soon as gathered in the churn in particles about a tenth of an inch in size, it is transferred to a centrifugal machine, whose drum is pierced with holes and lined with a linen sack that is finally taken out with the butter. As soon as the machine is set in rapid motion the buttermilk begins to escape; a spray of water thrown into the revolving drum washes out all foreign matter adhering to the butter; this washing is kept up till the wash-water comes away clean, and the revolution is then continued till the last drop of water is removed, as clothes are dried in the centrifugal wringer; the dry butter is then taken out, moulded and packed. It is claimed that the product thus so fully and quickly freed from all impurities, without any working or kneading, has a finer flavor, aroma and grain, and better keeping qualities than when prepared for market in the ordinary way.—[Dr. G. C. Caldwell.

Special Contributors.

Agricultural Affairs in Scotland.

[FROM OUR OWN CORRESPONDENT.]

Since the despatch of my last letter two events of first importance to breeders of Polled cattle have taken place, namely, the dispersion of the Bridgend Polled herd, owned by Mr. R. C. Auld, a nephew of the late Mr. McCombie, of Tillyfour, and the dispersion of the Ilains of Kelly Polled herd, the foundation of which was laid nearly three-quarters of a century ago. The Bridgend herd has been in existence only a few years, having been started by the purchase of a celebrated cow named Pride of Aberdeen IX., which Mr. Auld bought at the Tillyfour dispersion three years ago for 270 guineas—the highest price which up to that time had been paid for a single animal of the Polled breed. The great feature of the herd was the large number of animals which it comprised, tracing to the "Queen" foundation, from which sprang the famous "Prides of Aberdeen." Of these there were no less than twenty-eight, but it was round the five straight-bred "Prides" that the greatest interest centered. Pride of Aberdeen IX. proved a fortunate bargain to her owner, having each year dropped a heifer calf, all of which came under the hammer. The sale, which was held at Aberdeen on the 13th of September, was attended by a large company of breeders from all parts of Scotland. Though the cattle were in rather middling condition, and in some cases not of great merit, they fetched very high prices, the demand being exceptionally keen. For fifty-one head an average of £90 16s. 3½d. was obtained. Pride of Aberdeen IX. was purchased at 385 guineas, by Mr. Wilken, Waterside-of-Forbes, who also owns her dam, Pride VII.; her two-year-old daughter, a lengthy but somewhat plain quartered heifer named Pride XXIX., made 220 guineas; her yearling daughter, Pride XXX., 510 guineas, and her calf Pride XXXI., was sold for 250 guineas, the four animals realising a total of £1,433 5s., Mr. Auld's profit on the original purchase being at least £1,000. It was rumored that Pride XXX. and Pride XXXI., as well as several other of the cattle, were bought back for Mr. Auld, and as the sale was advertised to be entirely unreserved there has naturally been a strong expression of opinion against his conduct in this matter. The price at which Pride XXX. was taken out 510 guineas, is the highest that has ever been paid at a public sale for an animal of this breed. Twelve cows made an average of £114 19s. 6d.; eleven two-year-old heifers, £85 10s. 6½d.; eight one-year-old heifers, £156 3s. 9d.; seven heifer calves, £90 7s.; two two-year-old bulls, £53 11s., and eleven bull calves, £29 4s. 2d., the total proceeds of sale being £4,631 11s. The Ilains of Kelly herd, which was founded about the year 1809, was the oldest pedigree herd in existence. For many years it has been famous as one of the best male producing herds in this country, Mr. Bowie having bred seven first prize Highland Society bulls in the aged class. The sale was held at Perth on the 3rd of October, and the number offered was 14 females and 7 males. At first sight I was rather disappointed with the quality of the stock, but they showed great similarity of type and were undoubtedly nearer the original form of Polled cattle than most of the herds of more recent date. They lacked the size of the "Improved Aberdeens," but having good blood in their veins, they met a ready sale, the average per head being £66 1s. The highest price, 127 guineas, was paid for a member of the Jennet family, a strain which was brought to Ilains of Kelly from Tillyfour.

September was an unfavorable month for harvest operations, the weather being of a very wet and stormy character. Since the advent of October prospects have improved, but a large portion of the cereal crops in the north has not been secured and it has suffered greatly by long exposure to the weather, and is beginning to sprout in the stock. In the earlier district in southern and midland counties, most of the crop has been stacked in fair order. It is too early to give a probable estimate of this year's crop, but it will most likely be under average in quality. There was a splendid appearance of potatoes generally, but they have suffered a good deal from disease. Turnips, one of the

most extensive crops which Scotch farmers grow, are calculated to be a third below normal years. They have improved very much during the month of September, but are too far behind to make up the deficiency.

Agriculturists in this country are complaining grievously, and not without cause, of the restrictions which have been imposed to check the progress of foot and mouth disease, which is meantime spreading at an alarming rate in England and Ireland. During the last six or seven months the cattle traffic has several times been brought to a standstill, and through the stoppage of business many thousands of pounds have been lost to the country. In England and Ireland the conditions of movement were not so carefully looked after as in Scotland, and the disease is still spreading, apparently baffling the efforts of the local authorities to stop it. In Scotland it has been stamped out, though at a great cost, and meantime her ports are almost entirely blocked against cattle coming from either of the sister countries. The result of this is that store cattle are very scarce and farmers will have difficulty in securing a number sufficient to consume their crops. In the course of the past few months the Government have been pressed to shut all British ports against animals coming from countries that cannot show a clean bill of health. All that they have agreed to do at the present juncture is to carry out existing regulations in such a way as they think will prevent the introduction of disease from abroad. So strongly have the claims of the British farmer been urged, however, to have his flocks and herds protected from disease that it seems likely the Government will next year provide other safeguards than those existing for the stock owners. Many authorities are of opinion that although the importation of live stock from abroad was stopped in all but exceptional cases—the bringing in of breeding animals for instance, the country would gain rather than lose, as the same amount of food could be brought in with greater safety as dead meat. Irish cattle dealers are suffering great loss by the stoppage of all business between that country and Scotland, and they are complaining bitterly that the restrictions here are too rigorous, but let them first set about earnestly to stamp out the disease from within their borders, following the example which Scotchmen have shown, and then they may rest assured that their stock will be readily admitted to our shores.

A Chatty Letter from the States.

[FROM OUR CHICAGO CORRESPONDENT.]

One of the striking features in the markets these days is the extremely wide ranges of prices, showing the difference in the breeding and in the feeding of the stock. For example, Col. John D. Gillett, of Logan county, Ill., who by the way has just forwarded another lot of 165 head of fine Shorthorn heaves to London, Eng., was on the Chicago market recently with a lot of 1,788-lb. high grade Shorthorns, which sold at \$7.25 per cwt., and, at the same time, cattle nearly as heavy, fully as old and quite as expensive, were selling at prices ranging from one to two dollars per hundred less. This of course shows that something was radically wrong with the low priced cattle, and on hastily glancing at the figures, one would naturally take it for granted that the fault all lay with the breeding—that the Gillett cattle were highly bred, and could not help being good, etc.; but the fault was by no means all in the breeding. It was as much, or more, in the feeding. Among the cattle that sold at the comparatively low price were some that in breeding were by no means inferior to the others.

We must not lay too much stress upon blood. Good blood is highly essential to the greatest success in stock raising, but it cannot do the whole business; it cannot regulate the kind and quantity of the food, the comfortable or uncomfortable arrangement of the stalls or feed lots, in fact it cannot be brains for the herdsman; though some of us have known people with more money than brains, who seemed to think that the fortune at stock raising was assured when the lengthy pedigree was secured.

It is very true indeed, as L. B. Arnold says: "If you were to take one of our common cows and one of high breeding, and give them an exchange of places, exchange of feed, shelter and general management, that in a wonderfully short time the high-toned cow on scanty rations, and lack of care, would run down—the condition of the common cow, and the so-called common bossie, with queenly pampering, and every possible attention, would so change that you would not know her." So it is. There cannot be too much stress laid upon feeding and general management. When anyone makes as an excuse for not having good heaves that he cannot afford to purchase pedigreed animals, let him not be discouraged, but bear in mind the fact that Col. Gillett, the renowned Shorthorn feeder and breeder, keeps none on his vast, fine stock farm. He is a feeder and a breeder, and as much the one as the other, hence his success. Give the common cow a chance.

American breeders of black polled cattle are undivided in their opinions as to what name should be given to the Scotch beauties commonly known as Polled-Angus. One man out west, who had a large number of Galloways and a few of the former, tried to dub them together under the nondescript title of "Scotch-Polled," but that did not meet with any favor by those who were breeding Polled-Angus exclusively, and so fell through.

I noticed, at the Illinois State Fair that Messrs. T. W. Harvey, and Anderson & Findlay, prominent breeders of Angus Dobbies, have adopted the title of "Polled Aberdeen-Angus." Presumably they have adopted this unnecessarily long cognomen for the sake of honoring equally the two shires in Scotland whence these cattle originally came. People in this country first became acquainted with that breed by the name of "Polled-Angus," which is not a bad name, and is certainly long enough. Some short, expressive name ought to be uniformly adopted. There is a good deal in a name.

In these times there is being considerable said for and against "early rising" on the farm, and from the general drift of the arguments that are going the rounds, the mass of the testimony is against "getting up in the middle of the night." Everything goes to prove that all nature that is animate, particularly men and horses, sleep the sweetest and best just before the break of day, and that the last hours before the appearance of the gray of dawning day are far more beneficial in performing the work of tired nature's sweet restorer—sleep, than any that precede, hence it is impossible to fully meet the requirements by going to bed at a very early hour in order to get enough hours of sleep. It is argued, and with a good deal of force, too, that the people who make it a rule to go out, disturb the horses by feeding them long before day, and do several hours work before breakfast, that they could accomplish as much, or more, by exhausting the full sweets of early morning's sleep and doing no violent exercise before breakfast. It is argued that by night they would accomplish as much, or more, and would be less fatigued. It is a generally conceded fact that it does not pay to do much work before breakfast. It is injurious to one's health.

Many a promising life has been cut down as a result of wielding cradle and scythe in the heavy dews of morning on an empty stomach.

The Illinois State Fair, held at Chicago, was a big thing, and, as fairs go now-a-days, was pre-eminently one of solid worth, and compared favorably with any exhibit that has been made in the west. An effort will be made to permanently locate the State Fair at the "Garden City." The weather during fair week was perfect. The attendance was large. The net surplus of cash was \$6,000. The live stock departments were better filled in every way than ever before. All of the breeds were liberally represented. Farm machinery was exhibited in great variety and abundance. The great inventions that have been made in labor saving machinery within a few years make one wonder if there will not eventually be machines invented to take the place of, everything but brains. All in all, the fair was a big thing and was counted a grand success, but of course the inevitable blooded flyers were there, and, sad to say, trotting exhibitions were the chief features of entertainment outside of the exhibits of solid worth. That is one feature of nearly all fairs, namely, the horse racing, from which no valuable lessons can ever be drawn.

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Three Rivers Notes.

[FROM OUR OWN CORRESPONDENT.]

The district of land lying between Berthier and Three Rivers on the River St. Lawrence, consists of a very heavy clay extending back from the river for several miles, then ridges are found of a lighter loamy soil, and further back are ridges of a very lighter sandy nature, until we reach the base of the Laurentian range, where we meet with the cold sterile rock, said by geologists to be the oldest land on our globe. Everywhere are to be seen the marks of the glacial period; huge boulders which must have been transported by immense icebergs in those far-off ages of intense cold; *striae* on the precipitous cliffs and huge drifts of gravel. These mountains are covered with spruce—the pine having been nearly all removed by the lumberman—except far to the north—and innumerable lakes are interspersed, filled with trout and other fish. Truly a happy hunting ground.

The heavy clay portion, of which I have written above as lying adjacent to the St. Lawrence, is most admirably adapted to the growth of fine clear timothy. In the spring, owing to its lowness, it is very wet, and the overflowing water serves as a most perfect fertilizer, rendering the use of barnyard or artificial manures entirely unnecessary; in fact, it would be a complete waste of time and money to apply them. The crop is usually, as compared with other parts of the Province, very heavy, and in this neighborhood three tons is the annual average. The custom in harvesting the hay, is to bundle it for convenience in handling—the major portion of it being pressed and shipped to the American market. This year, owing to the cheapness of hay in the city of Boston, but little was shipped there; it was sent to Montreal to supply the demand of cattle shippers, and a considerable portion was also shipped to the Quebec market.

The pressing of this year's very heavy crop has already commenced, but prices range very low, being about \$5.00 and \$5.50 per ton. Owing to the wetness of last spring, in many localities there is a very considerable quantity of clover intermixed with the timothy, and this for feeding horses in cities is considered a deteriorating element—though I am inclined to think that it is rather an advantage; certain it is that it is an improvement for the use of fattening our dairy cattle. There is one thing in the harvesting of the hay in this district which I particularly noticed, and that is that but little attention is paid to the ripeness or rather unripeness of timothy at the time of cutting. Very frequently it is allowed to become too ripe altogether, thus increasing in hardness and extent of woody texture, thereby decreasing the nutritive elements and making it much more difficult of digestion by cattle or horses. No fact has been more frequently stated than this, and none has been more clearly established by scientific analysis. It should be cut when in bloom—but of course where labor is scarce, and a farmer has a large acreage to cut, he cannot succeed in securing the whole of his hay crop in a very perfect condition, but he can so average his mowing as to secure the greater portion in a prime condition.

It must be a debatable question for the intelligent farmers of this district, if it would not pay them better to raise and fatten beeves with their hay crop than to sell it at five or even six dollars a ton. They, however, seem to prefer to sell the hay crop, saying that there is less labor and expense, and that the acquisition of the manure is an item of but little moment to them. I am confident that they would make a much better showing by fattening cattle, as the demand for the latter must maintain itself for years to come. But in the Berthier and Three Rivers districts there is a very great necessity for the introduction of improved breeds, and a more assiduous application of manual labor. The agricultural societies have this duty in hand, and, speaking, or rather writing, without malice, I must say that judging by results, the societies have, in this district, not effected very great things. In excuse it may be said that they have an unambitious class to deal with and instruct. The agricultural colleges in the Province of Quebec have not by any means hitherto been successes; they have been failures. Let us hope that the one recently established by Mr. Whitfield, than whom no one is more enterprising, will meet with a different fate, and effect a very radical improvement.

The class of cattle in this district, as I have stated above, needs improving, and the same is to be said of the horses. The really good ones have all been picked up by American buyers, and the

unsaleable ones are kept on the farms for working or breeding purposes. Consequently the quality has year by year deteriorated until at present it is a very unfrequent sight to see a sound, useful animal. Thus a source of very considerable revenue to the Province has been removed, and immediate steps should be taken to remedy this. The class of stallion to be used should not be the heavy Clydesdale or Percheron, but should be one of a lighter build and more active organization. The Clydesdale and Percheron, while adapted admirably for heavy draught work in cities and elsewhere, are comparatively useless in the Province of Quebec, especially in our heavy winter snows, through which they sink and flounder most clumsily. An effort should be made to again have the round bodied, tough Canadian, so-called "pony," hardy, swift, docile and intelligent. Too much attention is at present given to the almost useless and always ugly "trotter"—breeding which is hazardous and frequently demoralizing. A good walking and general utility horse is more valuable in the long run, requiring less capital to raise, and much more readily sold, though, of course, at a lower price.

Selection and Care of Harness.

BY U. U. WOOD.

Harness is a necessity upon every farm, and of all the things used by the farmer it is used the most. In plowing and sowing, in reaping and mowing, day in and day out, the self-same harness is put to use. The wear and tear upon harness, therefore, must be exceedingly great, and it is no uncommon thing to hear of farmers buying new harness once in about every four years. The expense of providing himself with good harness, then, is one of the greatest disbursements to the farmer's financial pocket.

A large share of this continual expense is unnecessary, and in this article it is my intention to tell how I decrease it. Anything contributing to lessen the average farmer's expenses, ought surely to be hailed with delight; but in saying how I decrease them I do not wish it understood that I lay claim to originality, for I do not. I have learned both sides of the question from simple observation.

With harness, as with many other things, the best is the cheapest. I do not mean to say that fancy harness which costs a high price is the cheapest for the farmer, but what I mean is that well-made, sewed and riveted harness, of good, soft, well-tanned leather, is cheaper at twice the price than that which is poorly made from inferior leather. There is also another class of harness that the farmer should avoid buying; that which is made merely to sell, and which the maker will let you have at almost any price rather than not to have you purchase at all. The only good place to get reliable harness—for some of it is deceptive even to the experienced eye—is to buy direct from the manufacturer who uses the best of oak-tanned leather, and employs none but experienced workmen.

When purchasing your harness the team upon which it is to be used should be at the shop: especially is this necessary in order to get a perfect fitting collar. All farmers are not able to fit collars upon their horses, therefore it is of the first importance that the seller should be a competent judge, capable of fitting a collar upon any horse with the greatest possible comfort. A large number of horses annually are permanently injured by the want of a proper fitting collar. Naturally a horse's shoulders are the same in strength, shape and toughness, therefore a collar should be of the same shape and firmness on both sides. But many of them are not, and this is the chief cause of sore shoulders so prevalent among work horses. It often happens that one side of a collar is stuffed firmer than the other; and it is sometimes the case that the leather on one side is thicker or harder than on the other. Such collars should never be brought out of the shop.

After having fitted your horse with a good collar, the next thing is to procure a comfortable backband. The shoulders and back are most commonly the seat of sores among horses, although they need not be. In the selection of your backband—for there are innumerable kinds and shapes—a narrow, flexible, well-padded one—one in which durability is comfort, is the best. For all ordinary farm work, such as plowing, harrowing, drilling, reaping, etc., harness with hip straps and crupper is the most serviceable. When considerable haul-

ing over rolling land is to be done, breeching is the best. It is a good plan when purchasing harness to get both hip straps and breeching; then either can be used as occasions demand. When both can not be afforded, I would prefer hip straps, as they can be used to advantage on most occasions, are more comfortable to the horse, and are more economical to the saving of the remainder of the harness. The practice some teamsters have of tying the traces in a knot every time they unhitch can not be too strongly condemned. It is the main thing that causes them to rip and come apart. The strength of a tug depends upon its firmness. In the saving of tugs, hip straps will pay for themselves in one season.

In the choice of bridles the disposition of your horse must be considered. If he has been broken to a blind bridle and will scare without one, I say by all means get one. If, on the other hand, he is docile and has never seen a blind bridle, and you desire his eyesight to remain natural, I say emphatically, do not get one. A horse's eye is somewhat like a giraffe's. He can see behind himself with a very slight turn of the head. A blind bridle checks this natural tendency of the sight, and tends to throw it like the headlight of a locomotive, in a line directly forward, thus straining the lenses of the eyes, and impoverishing the sight. When once the practice of using them is begun, it should be continued; but I would advise no one to begin the practice unless he is capable of judging of the tendency of the blinds. Some blinds when rightly used are not very hurtful, and are the means of "setting off" a horse to better advantage, especially buggy horses. A horse in the shafts without a blind bridle is not at all in accordance with the tastes of most drivers, I among the number. The common, smooth-jointed bit is suitable for the ordinary, easy-going farm horse. A young fiery horse must have a more restraining bit.

The rest of the harness in parts and construction is about the same, and I leave its selection to the good judgment of every farmer.

Having bought new harness, the next thing demanding our attention is the keeping of it. This is where most farmers make a mistake. They do not take enough pains with their harness. Moisture is the great destroying agent of leather. Oil is its preservative. You know as well as I that if you do not oil your shoes they will soon become hard and hurt your feet. The same principle applies to harness. It requires oil, more oil. I have seen harness out of the shop three years, and out of oil just as long. Of course it was hard and full of unmendable cracks. New harness had to be bought the next year. No doubt you will at once see that farmer down as careless and neglectful. I did, and he was once one of the most extensive farmers in Illinois. He failed, not simply from neglect to oil his harness, but from neglect to oil everything. Metaphorically speaking, a great many things need oiling. Harness should be taken apart, all the weak places mended and oiled at least twice every year. The spring and fall are the best times; immediately before and immediately after the hardest work of the year. Select a warm, sun-shiny day; heat your oil (of all the common oils, neat's-foot is the best and cheapest) until you can scarcely bear your hand in it; have your harness taken apart and cleaned from all dirt, then thoroughly rub and re-rub each strap and part, including collars and hames. Having oiled a set, hang it in the sunshine for a few minutes, take down and rub again with your bare hand until no oil remains on the outside. Harness treated in this simple and easy way twice a year, will last twice as long as when merely smeared over once or twice in a lifetime.

Besides oiling there are other simple pre-requisites to be observed in order to get the greatest utility of harness. It should always be hung up, when not in use, in a dry place, free from mice and rats, and where the horses can not pull or knock it down and trample upon it. It should always be kept away from cattle, as the saline matter on it induces them to chew it. When on the horse it should never be subjected to sudden jerks or excessive straining on immovable loads. Every part should be free from twists. The tugs and lines are most apt to get twisted, and when this is the case, unnecessary wear and tear is the result. The lines should never pass through rings made fast to the hames. If passed through iron rings made fast to or a part of the hames, the wear at that place is exceedingly great. By giving proper attention to these small particulars and adding a stitch in time, the durability of harness may be greatly increased, much to the pleasure and profit of both beast and owner.

Veterinary.

Diseases of the Hock.

Professor Walley recently delivered a lecture on "The Principal Diseases of the Hock," to the members of the Midland Counties of England Veterinary Medical Association. The subject of hock diseases was of very great importance. It was a subject which had led, perhaps, to more controversy amongst veterinary surgeons than any other, and for that reason, if not no other, he thought it a good one to bring before them. They were perfectly well aware that of all the diseases of the hock, the so-called bone-spavin was the most important; and he referred very briefly to the anatomy of the joint, in order to point out that they had in the peculiar arrangement of the bones a very good reason for the formation of bony deposits on the internal aspect of the joint. But while he desired to point out particularly, with reference to the formation of these bones, the existence of a very marked predisposing cause for spavin, he mentioned hereditary predisposition as another very strong cause, remarking that of all animals with which they had to deal, the horse was the most predisposed to bony deposits, and especially of the hock. He considered also that one of the great predisposing

CAUSES OF SPAVIN

was the peculiar manner in which the weight was thrown upon the small cuneiform bones on the inside of the hock, the articulation here differing very materially from that of the outside of the joint. The pathology of the disease might be summed up in one word—inflammation of the bone involved, resulting in the throwing out of a large quantity of bony matter upon the outside of the joint. The symptoms of spavin were, he supposed, quite familiar to all. In most cases there was lameness, marked by one or two peculiarities. The first of these was that it disappeared with exercise; then the horse was most lame on turning on to the sound leg. Then they usually found the toe of the shoe more or less worn, and frequently the outside more than the inside, caused by the animal endeavouring to throw the weight upon the outside of the foot. The disease, however, frequently developed itself without lameness or other symptoms by which the attendant could become acquainted with its existence, and this led him to say a word about the examination of the hock for

THE DETECTION OF SPAVIN.

He pointed out the rules observed in manipulating the joint for that purpose, observing that some twenty-one or twenty-two years ago Edward Stanley demonstrated to them the best method, founded upon the anatomical arrangement of the bones to which he had referred. Notwithstanding that it might, perhaps, be considered "tailorified," he thought they would sometimes be quite justified during their examination in taking a mould of the hocks. There was a difference between spavin and what was known as coarse hocks, and his rule in dealing with them was to contrast them one with the other, and take all the bones and the age of the horse into calculation. If they found all the bones in keeping, and the horse perfectly free from lameness, he thought they were justified in passing the animal sound; but, on the other hand, if they found one joint bigger than the other, even if the horse were apparently perfectly sound, they were not justified in passing him without a remark. In regard to a comparatively aged or an adult horse, the length of the guarantee he recommended in such case might be much less than in the case of a young one. With regard to the treatment of the disease, it always came to one thing—the application of counter-irritation in some form or other. In firing he always took particular care to force the point of the iron well into the bony structure itself. Some people thought there was a likelihood of opening the joint, but it was extremely small, and practically it was annihilated, and they never need trouble about such a contingency. Tenotomy he considered perfectly useless, except for certain special cases. After speaking of the difficulty which attended

THE TREATMENT OF SPAVIN

when it affected the subtarsal ligament, Professor Walley went on to describe the characteristics of occult spavin. Although the cause of this disease was somewhat doubtful, he attributed its origin to the peculiar motion of the joint, and the consequent material interference with the blood supply

in the region. They were aware that in regard to this form of the disease the lameness did not pass off with exercise. However they might manipulate, the animal would go perhaps more lame at the close of his journey than at the beginning. There was no enlargement of the joint, though there might be a certain amount of heat, and there must be pain on concussion, the symptoms of which might be produced by striking the bone or the bottom of the foot with a hammer. The treatment of occult spavin was the most difficult thing they had to deal with, firing, blistering, setoning, or plugging being alike unavailing in curing the lameness, until they brought about ankylosis, which they were unable to do in all cases. From examination and investigation he was disposed to think that there was such a thing as gouty disease of the hock, and, naturally, heavy cart horses employed in town work were the animals most subject to it. As a possible means of arresting the ailment, he recommended change of food and an application of iodine to the region affected. He next proceeded to deal with

BOG SPAVIN AND THOROUGH-PIN,

pointing out that they were distinct and separate diseases, and dwelling upon the importance of satisfying themselves, before they proceeded to treat for bog spavin, that they had really to do with the disease, and not with thorough-pin. Bog spavin was frequently seen in very young horses, sometimes almost in foals. There were dozens of colts which were found to be so affected at twelve months old, numbers at two years, and it was of very frequent occurrence at three years. They had, therefore, hereditary tendencies to think of in their treatment. It did not necessarily produce lameness in all cases, and the animal might last for years; but as in a legal point of view, he was undoubtedly unsound, and was, in severe work, liable to fall lame at a sooner or later period. In the treatment of thorough-pin, as in the other cases he had named, counter irritation formed their great stock in trade, although there were several other methods of dealing with it, such as the application of pressure, the injection of iodine, or the use of the seton. In his own practice he had been more successful with the last named method than with any other means of cure. With regard to the seton, however, they must not expect any immediate result. Frequently months would elapse before they obtained any results. In the case of capped hock, the use of the seton would, in his opinion, be more often found beneficial than any other method of treatment they might adopt. In ordinary cases it was enough to open the part and deal with it as an ordinary wound. The last disease he referred to was

CURE,

In the great majority of cases curb was due to nothing more nor less than a thickening of the ligament, which of all others, from its position, was the least liable to strain of any kind. He pointed out the characteristics of the disease, maintaining that they were not to take as curb every little enlargement which occurred in the same region. Cases had come under his notice in which the injury from the horse striking the joint, or where there had been a little loose excrecence, which could have been removed with a stroke of the knife, had been attributed to curb. Its treatment was not difficult, and the disease might be cured in a comparatively short space of time. As to the passing of a horse with curb for trading purposes, he mentioned a case in which a horse shown at an agricultural show in Shropshire was refused the prize for the best stock getter because he had been fired, and the official veterinary surgeon would not pass him, although the owner said the injury had been due to an accident. The result proved that the veterinary surgeon was right; for afterwards twenty colts by the horse might have been found all with curby hocks. In conclusion, he directed their attention to a number of interesting specimens of diseased hock met with in the course of his practice, and on resuming his seat was warmly applauded.

When a horse gets past his twelfth or thirteenth year he is not usually profitable to keep. He may do a good deal of work after that date, but it will require more care and better feed to keep him in the best condition for work. Each year will also detract something from his value, and this must be deducted from the apparent profit on his labor.

SIR,—I have a young foal which has a hard lump on all its four limbs, just above the fetlocks, about an inch square. It is hard, just feels like bone. It was never lame, or in the least bit stiff. It took first prize at Guelph, but when taken to an adjoining fair was thrown out. Please answer through your ever interesting paper what it is, and what sort of treatment it should receive, and oblige an old subscriber.

B. W., Pensonby, P. O., Ont.

[From your description we are of the opinion that the thickening is caused by the foal travelling on hard ground. We often find foals affected in a similar way when the mare is worked and the foal allowed to follow her, setting up an inflammation of the periosteum or covering of the bone, causing it to thicken, often extending to the bone itself. Treatment—at first use cooling applications until you reduce the inflammation; then you might apply a stimulating liniment once a day, after bathing with cold water and salt; after using this treatment for a time, if the enlargements are not reduced, you might apply a mild blister.]

SIR,—We had a cow and oxen broke loose and got into growing grain just about ripe one night; the oxen got all right without any doctoring, the cow died first day, she was all right next morning, could not stand, gave her a pint linseed oil, but she got no better, by night; about three in the afternoon gave her salts and a cup of yeast. The next morning she was dead. Could you kindly tell me the reason of death? Before giving the medicine and after she passed grain quite freely. Please answer through your paper, and oblige,

F. R., Richmond P. O., Man.

[Your description of the case is not sufficient for us to say what was the matter with your cow. Kindly state how she was affected during the different stages of this disease, from the time she eat the grain until she died.]

The Farmer's Tool-House.

We have often spoken of the convenience and value of a small tool-house, which should be found upon the premises of every farmer, in which on rainy days, or whenever there may be a day or part of a day when there is nothing particular on hand to go at, implements and machinery out of repair may be mended and made ready for use. Or, in the event of anything happening when in operation, and at times too when the work is hurrying, which would cause delay, we can always have at hand the necessary tools to mend it immediately and go on with the work without much delay, and thus accomplish what there is to do in the specified time. We have often heard a farmer say that he fully expected to have done a certain field or allotted plowing or mowing, &c., if it had not been for that stone, stump or root breaking some portion of the machinery, to repair which he had to send two miles off, when it ought to have been done by himself on his own premises in half an hour or so. That very implement had shown weakness the preceding autumn, but having no little tool-house or workshop of his own and the few necessary tools, it was put off altogether; and now, in the midst of the season, when he depended on his finishing this particular piece of work to go on with getting in the crop, the very thing happens that he was afraid several months before would happen, and which he fully intended should be prepared for in time for the season's work. A shop and tools would have saved all this and as much money as would about have supplied the tools. Sometimes very small things effect valuable purposes which have a great deal to do in carrying on systematically and at the right time the indispensable operations of the farm.

Now, as it is really next to impossible to conduct a farm in all its parts as it should be without such a shop, in which so many things can be done at leisure times, especially during inclement weather, allow us to urge upon every one who lacks this important annex to every well-regulated farm, to arrange such a shop, filled out with all the necessary tools by the end of next November, in order that the requisite repairing may be done, and even various new things made that would be useful on the farm and in the garden by the time the season again opens. Once establish such a convenience and the wonder will soon be how it was possible to manage the farm thoroughly and with the best results so long without the little workshop.—[The Gemantown Telegraph.]

Stock.

The Canadian Stock Yards, Montreal.

When in Montreal last summer, accompanied by our artist, we went to these stock yards, and believing them to be of interest to you we took this sketch from the top of the Canada Pacific Railroad offices. The yards cover a large space, and are capable of accommodating several ship loads of cattle. It is to these yards that nearly all your cattle are shipped before being embarked on the steamers for Europe. This trade has now assumed a great magnitude, employing a large staff of hands, and several lines of steamships. Mr. Kennedy is the principal proprietor or manager of these yards. Messrs. Acer, Kennedy & Co. have erected a block of sale stables for horses, and import Clydesdale and other breeds from England,

A Convenient Time to Secure Pure-Bred Males.

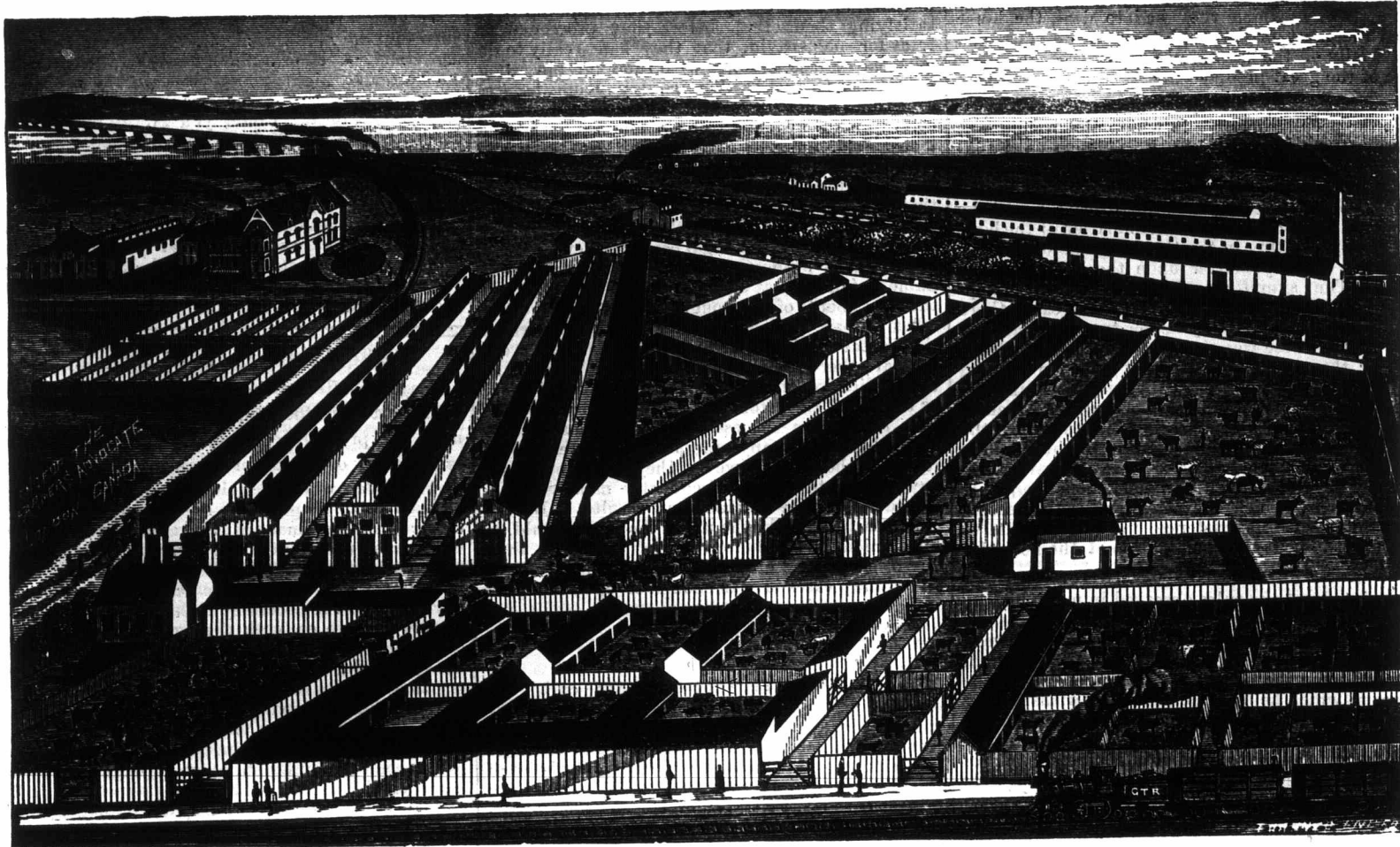
BY J. C. SNELL.

The present I regard as an opportune time to call the attention of our farmers to the advantage and importance of securing good, pure-bred bulls, rams and boars for their herds and flocks.

A word as to the best season to procure young male animals. I believe, on the whole, during the months of October and November is the most favorable time to secure either bulls or boars, and is not too late for rams, though they should be selected earlier. At the commencement of winter breeders are apt to find themselves over-stocked, when the young bulls have to be separated and tied up, thus taking up more room, and just then, in order to shorten up before winter, the lowest paying prices will be accepted. Besides, at this time, there is a greater number available from

High Class Breeding.

Few men go into the thoroughbred stock business with a proper conception of the real value of high class breeding animals as compared with native stock. The very fact of starting from a lower to a higher grade of stock shows some appreciation of the difference in merit and the desirableness of change; but it is not until the stockman has gone through years of observation and experience that he sees the full significance of good and bad blood. An advance of ten to fifteen dollars on an improved sire over the cost of the scrub will at first seem greater than ten times that sum paid with the matured judgment of later years. Many a man who buys his first blooded bull, with fear and trembling, at one hundred dollars, will afterwards pay three hundred or five hundred, with confidence, for a similar purpose. The ram or boar which to the novice seems dear at fifty dollars is often cheap to the eye of experience at one hundred. Not in breeding stock, any more than in general farming, in running a newspaper, in conducting a factory, or in anything else, can a man be expected to rise at once to the full measure and



The Montreal Stock Yards and Montreal Horse Exchange,

POINT ST. CHARLES, P. Q.—THE PROPERTY OF ACER, KENNEDY & CO.

and are buying and selling large numbers of horses continually. They have also a race course (a half mile track) at the back of the stables. They have also erected a fine, commodious hotel, and a bank is also to be built here for the accommodation of the business. In the picture you see the cattle stables and yards, also the hotel with the sale stables near it. The Victoria Bridge is but a short distance from the race course, and all passengers going through it pass in view of the cattle yards, &c. This property has been improved since this sketch was taken. You will all be interested in the cattle and horse market in this locality, as the ruling prices to be paid for your stock will be arranged here, and as this will be the centre for the stock buyers and shippers in Canada, this will give you some idea of what the stock yards and sale stables are like, and will be more interested in them as you read reports of sales.

which to choose, whereas, in spring, we often find that the better ones have been taken during the fall and winter by the wiser and more far-seeing, leaving a smaller number and a lesser choice, and, at the same time, a larger demand on account of so many putting off the time for securing a bull to the last moment; then there is a great rush for them, and failing to find one as good as they would desire, it often happens that buyers have to take what does not suit them or go without, which would be worse still; for a thoroughbred bull, even if he be an inferior one, will be found, as a rule, to produce better stock than a grade bull of fine appearance, because the blood of the former being purer he will prove the more impressive sire, and the good qualities of his ancestors will tell on his progeny, while the latter will be apt to breed back to his scrub ancestors. Therefore, I would say by all means select your males early in the season; buy the best your means or your circumstances will warrant, and always buy a better one than the last one you used, and then you will be most likely to perpetuate and continue the improvement already made.

scope of his business. Nothing but the lapse of time, and close application to the interest he has in hand, will develop one's thorough understanding of these things. It is unreasonable then to expect the beginner to walk right up in competition with the veteran, and with equal confidence invest his all in something concerning which he has only commenced to learn. Nothing, however, will so quickly develop one's capacity in this direction as practical breeding. There are numberless little points cropping out in daily experience, concerning which the oldest breeders and the most painstaking press will furnish but limited information—little things of such importance and value that they cannot be ignored. It is in his everyday work the breeder most plainly sees that the high price paid for a superior sire is distributed piecemeal throughout all his progeny, and is returned to his pocket in every developing point of superiority in succeeding generations. Here he sees, as he can see nowhere else, the supreme folly of allowing a trifling sum to stand in the way of securing a desirable and needed breeder. His ideas are constantly enlarging, and his maturing understanding works wonders in the mutation of

relative merits and values. His business education is more slow than that of many other men, but it is for that very reason the more thorough. The breeder gets into the higher rounds of his business with no "amattering" knowledge of what he is about, and usually succeeds according to the thoroughness of his practical training. And one of the most important points on which this training is brought to bear is the exercise of level headed judgment in the matter of values.—*Pittsburg Statesman.*

Polled Angus or Aberdeen Cattle.

The accompanying engraving represents a group of Polled Angus or Aberdeen cattle, the property of Geary Bros., of Bli-Bro Farm, near London, Ont. The cow is "Keepsake VIII," and was two years old last February. The calf was seven months old at the time of our sketch. The bull, "Lord of the Forth," is from the famous Ballin-

What to Feed Sheep.

Now that the feeding season is approaching, it becomes a matter of great moment what we shall feed our animals.

Oats is the best grain ever fed to sheep if only one kind is given. Rye, oats, barley, buckwheat, peas, beans, Indian corn, wheat, bran, shorts or middlings, oil meal, and sorghum seed and millet seed are all good for fattening sheep, and are therefore good for ordinary feed. But they are much better mixed than alone. Sheep are not only fond of variety, but it is better for them; better for their health, their growth, their meat and their wool. Corn is too heating to be fed alone, but when fed with one-half pound of oil meal per day, it does not show any of its heating effects. Therefore, if corn is cheap, it may be the most economical to feed 1 1/2 lbs. corn with this small amount of oil meal. Bran and middlings are often very low in price, and when this is the case, and corn is

and millet, and to fifteen bushels of the mixture was added one bushel of flaxseed, and all ground fine together. Each sheep was fed two pounds of this ground mixture with hay, and made a regular gain of three pounds each per week, besides growing an unusually fine staple of wool. This small amount of flaxseed is peculiarly soothing to the digestive organs. It is a perfect preventive of all diseases caused by dry fodder.

Sheep may be fattened just as well on such a ration as this with straw for coarse fodder, requiring only a slight addition to the grain ration. When it happens that corn is fed alone as the grain food, it is well to put hay in the rack, and then spread the shelled corn on the top of the hay. The sheep will eat the corn as it falls down into the trough with the fine parts of the hay, and in eating the corn, will also eat hay with it; thus bringing the masticated corn into the stomach mixed with the fibrous hay, rendering it more porous for the easier action of the gastric juice.—[*Kansas Farmer.*]



POLLED ANGUS OR ABERDEEN CATTLE.

THE PROPERTY OF THE GEARY BROS., OF BLI-BRO FARM, NEAR LONDON, ONT.

dalloch herd, Scotland. The Messrs. Geary are the most extensive importers and breeders of this class in Ontario, and have a high reputation amongst breeders of Polled cattle in America. For some years past these gentlemen have been engaged in importing stock from the leading herds in the Old Country. They also import Shropshire and Lincoln sheep; also Clydesdale horses. Messrs. Geary have on their farm the most complete and neatest cheese factory we have seen in Canada—in fact, quite a pattern for others.

Two meals a day are talked of for horses at work, but the practice will not, probably make more headway than the proposition for two meals a day to working men. The noon meal for horses should, however, be mainly grain, which can be quickly eaten and will not disturb the stomach.

also low, 1 lb. of middlings and 1 lb. of corn may be fed, or in equal parts by weight.

It is much better to have the grains ground into meal. This greatly enhances the value of them for feeding purposes. Oats, corn, rye and flax seed ground together in proper proportions make the best feed for sheep that we ever used; and in noting the experience of other farmers, we never heard of anything better.

As a single food for fattening, oats is probably the best. The ten to twelve pounds of husk on oats per bushel, is what renders this food healthier than the more concentrated food, corn. This husk renders the whole porous in the stomach and thus more easily saturated by the gastric juice. Besides, oats are a nitrogenous food, and supply the animal wants for this element, but oats usually bear a proportionately higher price in market, and may often be too dear to feed.

The feeder can not err in giving too great a variety in the food of sheep. The best ration we have ever known fed to fattening sheep was composed of equal parts by weight of oats, corn, peas,

Mr. David Nicol, of Cataragui, Ont., one of our esteemed contributors, is again to be congratulated upon his success in securing the highest prize for an essay written for the Board of Agriculture and Arts. He wrote on the most "approved methods of making butter." There were five competitors. He has won five first prizes and several seconds as an essayist. Mr Nicol's opinion covered thirty sheets of foolscap and was accompanied by diagrams.

A restless disposition in a horse is often very annoying and generally hard to overcome. One thing noticeable about it is that such a disposition generally belongs to a horse which is deficient of real good horse sense; hence the lack of a good foundation on which to begin a reform. Kind treatment and quiet handling are about the best treatment that can be prescribed in such cases. One thing is positive, that the rougher they are handled the more liable they are to become nervous and excitable.

The Dairy.

Simple Rules in Butter Making.

The following is the address of Professor J. P. Sheldon, of England, delivered in connection with the working dairy exhibit at the Dominion Fair recently held at St. John, N. B.:

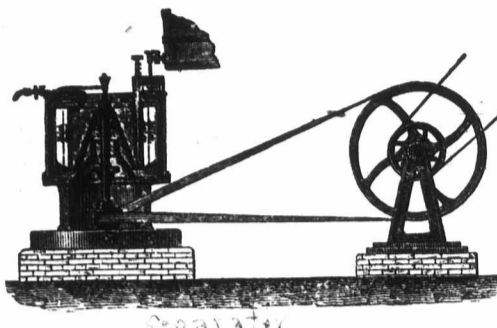
It appears to me that good butter can be made almost any where and by almost any person, providing rational facilities are at hand, proper utensils are provided, and ordinary attention is paid to the details of the process. I do not say that the finest butter can be thus produced with ease, for to specially excel seems to be the reward of genius in butter-making as in everything else; but good butter, butter that will win approval wherever it goes, can certainly be produced where now an inferior article only appears, if due care be taken. And I may say, further, that the volume of care required is not by any means difficult to learn or irksome to practice, but that, on the contrary, it is just as simple and easy as the careless ways of unsuccessful people. Butter has to be made somehow, by every one who makes it, and the difference in the "how" makes all the difference in the butter. Bearing in mind that the work has to be done, it is well to remember that anything that is worth doing at all is worth doing well, and especially is this true when to do it well is just as easy as to do it badly, and far more satisfactory.

It is a slight on good milk that bad butter should be made from it; it is an insult, too, to the cow who gives the milk—the cow who has done her part of the contract well; it is anything but complimentary to the public who are invited to eat the butter, as if to say they have no such thing as delicacy of taste; it is, also, anything but creditable to anyone to turn out such stuff, and a loss to the producer as well as to the consumer. Many butter makers wonder how it is that they realize poor prices for the butter they have to sell; yet it is at the same time true that the public never object to pay good prices for a good article. The best butter makers in America command 70 to 100 cents a lb. all the year around; the most of them are down in the tens or in the twenties at most; and the difference is the reward of the careful man or the careful woman, as the case may be.

The first thing to do is to take proper care of the milk. Assuming that it is cleanly taken from the cow into a clean pail, it should be put into clean pans, in a clean room, whose temperature should not vary beyond reasonable limits, the year round, say from 50° to 70°. The room should be clean, I say, and it should be outside the influence of impure odors; the last because milk absorbs such odors and reproduces them in the butter. I may mention here that cows should have food which does not communicate an unpleasant taint to the milk they give. Should there be any such taint in the milk, or odor in the room, a pinch of saltpetre in the milk will go far to checkmate them. But in any case, taint or no taint, odor or no odor, it is of the first importance that milk-rooms should be kept clean, should be lime-washed occasionally to sweeten them, and should be swilled tolerably often to remove dirt, and other "matter out of place," from the floors. The utensils should be scalded each time after being used for milk, scalded with boiling water, rinsed with a solution of soda, and afterwards with clean, pure water. The room should be well ventilated, and only with pure air, and the windows should be screened so that no strong ray of light shall fall on the milk—this last because light develops fermentative—the organisms which lead to the fermentive decomposition of milk. Thus, in milk-rooms, cleanliness, ventilation, and regulation of light, are matters of importance.

The foregoing paragraph refers to dairies in which the centrifugal cream-separator has not yet found a place, and to the shallow-pan system of milk-setting particularly. To the deep-can system, and specially to the Cooley system, this refers only generally, as I would have them refer to any room whatever. I may say here that the best of butter may be made on any of the three systems of cream-raising—the shallow-pan, the deep can, or Cooley, and the centrifugal separator—providing care and intelligence are employed. Annexed is a cut of the Centrifugal Separator. The chief advantages of the separator are that the cream can be got from the milk while both are new and sweet, that less of it is left in, and that fewer utensils are required in the dairy. Perfectly fresh butter from perfectly new milk may be thus obtained, if desired; but the best

authorities here consider that we get better butter from cream that has had time to mellow and ripen, rather than from fresh cream, because the latter is more or less insipid. But in any case, cream should be skimmed whilst it is quite sweet, and, no matter how long it is kept before churning, it should not be allowed to go sour. To let



cream go sour is to injure the flavor and quality of butter, if not to diminish its quantity. To churn it while it is too young, as one may say, is to produce a pure-flavored but an almost tasteless butter; yet will such butter improve in flavor by keeping, though the flavor is better secured by keeping the cream to ripen—keeping it at a temperature of 50° or 52°, putting in a bit of saltpetre or glacioline to prevent acidity, and stirring once or twice a day to have it all exposed to the air, and to prevent the formation of a crust on the surface. Glazed earthenware crocks are as good as anything to keep cream in, between skimming and churning; while pans of the same material, or the seamless ones of enamelled iron, answer well for milk-setting.

Of churns there is a large variety, but I have found none better, or easier to keep clean, than the improved barrel churn. There is also another churn, called the "Victoria," an end-over-end churn, which has no blades inside, and, by opening at the end, affords great facility for taking out the butter, as well as for seeing that the interior is perfectly clean. I do not say these churns are better than any other, but I do say that they are good enough for anybody, and that the finest butter can be made in them.

Assuming that the cream has remained free from sourness during the time it has been kept for ripening, and that it is not more than a week old, I may say that the principle of acidity, artificially introduced when the cream is put into the churn, will be prone to do good in helping the cream to relinquish its butter, and in making the butter firmer in body and brighter in tint. And this is attained by simply adding to the cream about five per cent. of its volume of sour buttermilk from the previous churning. Different days' cream should all be mixed together an hour or two before churning, so that it may all be old alike, as it were. Fifty-seven to sixty degrees Fahr. is the normal temperature at which it is best to have the cream when it is being churned, but it may well vary from fifty-five to sixty-five degrees, according to the time of the year and the temperature of the room. These points set right, the churning should be done at a regular speed, which is slowest at the start.

When the butter is forming in the churn, and resembles grains of mustard seed which are just beginning to coalesce together, it is a good thing to drain the buttermilk out of the churn through a fine sieve, and to pour in clean cold water; the churn should then have a few turns, the water taken out as the buttermilk was, and fresh water put in; this process should be repeated several times, until the water comes clear of buttermilk out of the churn. This system of washing the buttermilk out of the butter may be regarded as the simplest and most effectual that can be adopted. And as it is of the utmost importance to the keeping quality of the butter that all the buttermilk should be got out of it, so is it necessary that it should be carefully got rid of. Butter that is riddled of its buttermilk, which to a great extent is composed of casein—nitrogenous matter which is addicted to early decay—will keep well for some time, providing the other preliminaries I have mentioned have been properly attended to.

The butter well washed in the way described, requires little or no purification from buttermilk after it is taken from the churn, simply because there is little or no buttermilk left in it. But it requires to be worked in order to compress and consolidate it, to compact it into a solid and coherent body, and to mix with it the proportion of

salt which is thought desirable. If, however, the butter has not been well washed, or has only been partially washed, inside the churn, it must be washed outside of that machine; and for this purpose, as well as for compacting the butter, and for mixing the salt with it, it is always desirable to use a butter-worker, and not to touch the butter with the hand. The butter-worker, properly used, does its work much better than the hand; it does not soften the butter as the hand does, and it does less injury to its grain and texture—matters which are of no little importance to the appearance of the butter. During the process of working the butter, pressure, not friction, should be employed, for friction injures the grain of the butter. The quantity of salt to use will be governed by taste, and by the length of time the butter has to be kept, but it will vary from one to five per cent. of the weight of the butter.

The points then to be attended to in butter-making are these: Cleanliness, temperature, and regularity of details.

Rotation of Crops for Milk Dairy Farm

A dairy farmer gives his experience in regard to the management of a milk dairy farm, upon which some grain is grown and soiling practiced, as follows:

No dairy can be managed profitably without some soiling and a field of roots for winter use. Pasturing is convenient, but not profitable, excepting on cheap land. Where land is high-priced, and where labor is costly, one must make the land produce enough to feed more cows, or at least to keep them in full flow all the time. This can only be done by growing some fodder crops. A seven-year rotation is very convenient for a mixed grain and dairy farm. There will be a field of wheat, one of barley or oats, one of corn, one of roots, one of clover or fodder crops, one of grass and clover, and one for pasture. By keeping the land under crop all the time some fields will produce two crops in the year. For instance, I will go through the treatment of one field for the seven years, and all, of course, will come under the same rotation. Let us begin with a field newly seeded to timothy and clover with wheat. This is cut for hay, and as soon as the hay is off it is top dressed with plaster and some artificial fertilizer, a mixture of 150 pounds of bone flour and 100 pounds of nitrate of soda. This will help to produce a second crop as heavy as the first, and excellent pasture the second year. It is plowed the third year for corn, well manured if possible. Then follows a crop of mangels and fodder corn for soiling, after which follows barley or oats seeded with clover the fifth year; the sixth year the clover is cut for hay, pastured and turned under for wheat, which brings us to the beginning again. If instead of clover the barley or oats is followed by fodder crops, a great quantity may be produced. For instance, as soon as the barley or oats is cut the ground is plowed and planted with Early Canada or Evergreen Sweet corn, in drills three feet apart, and seeds one inch apart in the drill. Four to six tons of the best cured fodder can thus be grown on an acre, and the ground can be sown late in the fall to rye, which can be cut in June green for green fodder, or cured for hay, and a crop of corn fodder again taken off in time to plow the ground for wheat. By using some artificial fertilizer, at a cost of \$5 or \$6 per acre, a crop worth \$30 can be grown, and the ground left in better condition for the wheat. All this fodder will feed a great many cows. It is in this way that the most can be made of the land, and the land be increased in fertility year by year.

PROBABLE YIELD OF CROPS.

The yield of crops grown in such a rotation on 64 acres should be as follows:

| | |
|---|-------|
| Eight acres of wheat, bushels..... | 200 |
| Eight acres of oats, bushels..... | 400 |
| Eight acres of corn, bushels..... | 400 |
| Four acres of mangels, bushels..... | 3,000 |
| Three acres of fodder corn, tons, green.. | 60 |
| Seven acres of hay, tons..... | 10 |
| Eight acres of clover, tons..... | 16 |
| (or of green fodder, 100 tons.) | |

Eight acres of pasture. In addition there would be about 20 tons of straw and 20 tons of corn-stalks. A farm of 64 acres thus managed, and in good condition, should feed at least 25 or 30 cows. I would certainly advise that one field be cultivated in fodder crops adjoining that used for pasture, and that these crops be fed in racks on the pasture-field, by which it would be highly manured and fitted to produce 100 bushels of corn per acre.—[Dairy.]

PRIZE ESSAY.

Summer versus Winter Dairying.

BY J. B. BESSEY, GEORGETOWN, ONT.

In the United States dairy methods have undergone great and important changes during the past quarter of a century, and scarcely a year elapses that does not bring out some new idea or device for improving this branch of industry.

Winter dairying may safely be accorded a first place among these new departures, for few, if any, have done so much, and none more, for the brief time it has been in practice; not by any means underrating or ignoring the respective merits of each, more particularly those which have been made in the different mechanical apparatus now deemed necessary to the proper manipulation of the dairy product.

Taking it for granted that all are well acquainted with the ruling system which has prevailed in Ontario, viz., summer dairying, we will not wait to speak of it here, for to give a description as generally practised by different dairies would require more space than it would be proper to occupy in this article altogether. We shall, however, allude to it as we pass on in our efforts to explain and show the many advantages of winter dairying, which, however, is not antagonistic to summer dairying, but its great panacea.

The especial advantages of winter dairying are best seen in the manufacture of butter, and in which connection we will consider it; allowing as it does of fresh goods being put on the market at a season of the year when the demand for such goods is brisk and prices enhanced, and the percentage of loss by spoiled lots is reduced to the minimum.

The advantage of these rosy goods is the more noticeable when brought in direct competition with summer dairy packed tub butter, which may be very fair of its kind, but which always concedes a higher place to its new, fresh friend, which goes to the consumer in its best state, when it is a delicious morsel to be relished even by the epicure, inducing all to use it freely, thus creating an increased demand certain as the return of the day itself.

Some of the opportunities in store for Ontario dairymen may be gleaned by glancing at our neighbors for a moment. In 1850 their butter make amounted to a few millions of pounds only, and of indifferent quality. Now it has reached to the surprising amount of 1,300,000,000 pounds annually, with a very marked improvement in quality, and fully 50 per cent. in market value, which is not the least astonishing fact.

Some of the leading features in winter dairying may be briefly noticed as follows: It consists in having the cows in the dairy in full flow of milk during the winter months. This is secured by drying off the cows early in July or late in June, as the season and circumstances may dictate. They come in milk again in September, two months being a sufficient rest for cows having pasture grass advantages for recuperation. Farmers engaged in a mixed husbandry will readily observe the advantages of this system in connection with labor, when engaged with harvest work, as it allows them to devote their whole energies to this part of their farming, which invariably exhausts their daily physical strength, without the extra duties of the dairy in addition to the long and late hours during harvesting. Then, also, the vexatious work of milking during fly time, which lasts most of July and all of August as a rule, is dispensed with, when many at other times sweet tempers have often been fearfully disturbed. More particularly is this true of Sabbath evening milking at this season, when a more genial and pleasant pastime can be had than worrying with a persistent switch at the end of a cow's tail; not only often soiling your clean clothes, but occasionally putting one square in the face, which is enough to interfere seriously with the day's devotions.

Cows that are managed under the winter dairy system will give a much larger average yield, and more pounds of milk in the aggregate for the year, than those treated under the ordinary summer dairy management. Then, again, it does not require as much milk to make a pound of butter in winter dairying as in summer. Under the winter

system cows properly managed will make an average of 300 pounds of butter yearly; while in summer dairying the average is from 150 to 175 pounds. Then as to quality, the best criterion is the prices it brings in the market being from twice to three times that of summer packed grass butter. These are hard facts, and not fancies. In four years' continuous dairying, both summer and winter, with an average of forty cows, I have found the above statements as to the yield to be invariably correct, and also the milk to contain a larger percentage of butter fats.

In the older sections of the Province, where little or no lumbering is carried on, the adoption of winter dairying would be an excellent change for the worn-out farms; where a large profit would accrue from the superior quality of stable manure made, and which can be very cheaply hauled to the fields, providing the proper material was used for bedding, which might consist of cut straw, wheat chaff, sand loam, or any other material that would readily take up the moisture and mix with the excrement of the cattle. This would serve in a great measure to solve the problem of farm labor, which at the present time is engaging the serious attention of the farmers of Ontario, by introducing a more equitable division of farm work, allowing the farmer to retain his more intelligent help, which class of men are always ready to engage at reasonable remuneration for constant employment, believing as they do the adage of the "rolling stone." It may be proper here to remark that none but the most intelligent have any business in the dairy; for if there is any position under the sun that rough, ignorant, filthy, loud-mouthed, noisy people should not occupy, it is in connection with the dairy. A more fitting place far for such would be in the parlor, which will convey the idea I have of their fitness for the dairy, from the eternal suitability of persons to pursuits.

A very striking contrast is presented between cows treated under the winter dairy and those wintered, as is often the case, on the lee side of some straw stack, which poor, unsightly animals require half of the summer to put them in condition to be of use to their owners. In seasons of long, protracted droughts, is the greatest amount of loss felt in connection with summer dairying, often arresting the flow of milk quite early in the season, and so seriously that the cows do not recover from the effects of it, whereby a great loss is occasioned also oftentimes by the expulsion from the herd of otherwise good milkers, but which have not the capabilities of sustaining life and producing a large flow of milk without food and water.

It sometimes happens that the grass on which the cows are pastured, although of luxuriant growth, may be nearly worthless for dairy purposes. A case in point will serve to illustrate my meaning. The milk from a herd of cows which was being disposed of at a creamery and the percentage of cream; as the ordinary standard of the herd in question was previously satisfactory, suspicions were naturally aroused that all was not right. When an investigation was made, after general observations failed to reveal anything wrong, it was found that this unsatisfactory state of affairs arose from, and was caused by, the quality of the grass on which the cows were, at the time, feeding. The milk appeared just as if it had been skimmed. The cream that did rise to the surface was as thin as the blade of a case-knife, and as white as chalk and quite as tasteless. This incident seems to show how the summer dairy may become very unprofitable by the cattle feeding on pastures that abound with unnutritious grasses. The greatest mistake, and one that is quite common amongst summer dairymen, is to allow the cows to shrink occasionally, to their permanent injury. The want of observing the grass supply and its kind has its final ruinous result in the pulling down of the total yield of each cow.

This, however, is not always attributable to neglect and indifference on the part of the farmer, but, in most cases, arises from want of the proper time to devote to the careful outlook daily that is really necessary to the well-being of a herd of cows in milk during July and August. As we have already referred to the onerous duties devolving on the farmer at this season (of which we could speak at length from experience), we will leave it to the reflection of the readers of the ADVOCATE. The great question of food for winter dairying has been practically in America in the recent past, through the munificent benefits derived from the introduction of ensilage food and the silo, notwithstanding the unsatisfactory results experienced by

our scientific explorers: we refer to the Model Farm report for 1882.

I shall not here attempt to give a minute description of the silo; it is not necessary to do so, for its merits are already established and known to the dairyman. It comes to us as an American introduction, which, however, properly belongs to the Germans. Its Americanized appearance is perhaps what has aroused the prejudice of our Professor, whose sympathies are well known to be on the side of turnips. This is to be expected, however, when it is known that he is a pronounced beef grower, and in no respect a dairyman. I am well pleased with what I have seen of ensilage for myself, and its apparent effects on a herd of one hundred cows in milk throughout a winter—the material results of which, in milk and butter, were highly satisfactory; also the condition and appearance of the stock in the spring were healthy and particularly pleasing to the eye. Such arguments in hard facts are more than the common average dairyman can resist. For myself I must yield in obeisance. There is one point to which I will allude. A great deal is sought to be detracted from ensilage food, for the reason that grain is often fed in connection with it. True it no doubt is, but the results advise and justify its being done, and I may safely say the same of grass; but if confined to ensilage, with a handful of coarse feed, I would much prefer it to taking my chances for the summer on grass alone from a reasonable acreage, without grain or corn fodder for hand feeding.

Speaking of the inducements and opportunities for winter dairying, I may say that they are unlimited. We have no statistics here to show just where we are, but we can gather from our cousins sufficient data to warrant the foregoing assertion. It is estimated they require 300,000,000 pounds of summer packed butter, in addition to the amount of well made, fresh, rosy goods to supply their trade. If this be the state of the trade with them, where winter dairying has been adopted quite largely, then we as dairymen in Ontario need not be afraid to advance in this direction for fear of not being able to find a profitable and ready market. I aver that our experience in this departure would be but a repetition of their's since practising the winter system, and that has been found to be a largely increased consumption, particularly by the cities and towns, though, in many cases, finding customers among families who practically use little or no tub butter, having a strong aversion to it.

Stock-raising is perhaps the next consideration in this connection, and one of great moment to the dairyman, who should be able to replenish his herd from its own produce; assuming always that he has blood in his herd worthy to be perpetuated. I prefer, for stock-raising, to have calves dropped in September rather than those in any other month of the year; for they are more certain to receive regular care and attention than if dropped in the spring, when too often they are allowed to take care of themselves, presuming too much on the good offices of grass. Where a calf is fed for the first six or eight months of its existence, there is not much risk about its growth when turned on grass the following spring, for it will invariably be found to be a straight, clean calf, with little or no indication of what is termed "pot bellied," like its spring-born relative. This practice is the one followed by professional breeders, who breed the young stock solely for selling purposes, and which would not be repeated if found to be unprofitable or injurious to the young calves. I know this to be the special favorite system of dairy stock breeders from a long acquaintance with them, and from experience. In corroboration of this I give the Ontario Ayrshire Register, and the American Jersey Herd Books, which will show a large percentage of thoroughbred dairy stock registered in their volumes as being fall calves. These are facts which ought to allay any amount of prejudice on this score; although I know it is hard for farmers to change from any mode they have practised for years.

From the foregoing it will readily be seen that for butter-making winter dairying is preferable to that of summer, and at the present time offers strong inducements to any who are situated so as conveniently to change their system to do so. Each dairy that makes the change will not only directly benefit itself, but also, to a certain extent, the old system which it left, and find that it was formerly as Lincoln's "driving square pegs into round holes," and be delighted with the discovery of their natural aptitude to produce "the richest treasure mortal time can afford," which all epicures agree in saying is—*fine, pure butter.*

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Entomology.

Garden Insects.

One of the greatest boons to gardening would be the discovery of efficient methods for the destruction of insects, as well as remedies which are easily to be procured and of easy application. This, however, is a difficult matter to accomplish, and upon a review of the season's work we recognize but little absolute success.

The cabbage worms have been abundant and destructive. We have warred against them with tobacco-water, saltpetre, alcohol, boracic acid, bisulphide of carbon, etc., in various combinations, but we finally settled upon an emulsion of kerosene oil and soapsuds as the remedy that, all things considered, was the most satisfactory. It appears that one ounce of common yellow, hard soap, one pint of kerosene oil, and one and one-half gallons of water, well mixed and stirred, and applied by means of a rose from a watering-pot, destroys all worms that become thoroughly wet with the mixture, and does not injure the plant. Care must, however, be taken to keep the ingredients thoroughly mixed in the pot, for if the oil is permitted to rise to the surface, so that it will pass out upon a few plants, it will prove fatal to the few, while the remainder will not receive enough of the oil to destroy the worms. In this case the kerosene is the insecticide, the object of the soap being but to thicken the liquid so as to retard, in a measure, the separation of the oil from the water. A larger proportion of soap makes the water so thick that it will not flow readily through the fine openings of the rose. A larger proportion of oil endangers the plant, while a smaller proportion is inefficient against the worms. There is one caution, however, to be given: If repeated applications of the mixture are made upon the same plants, the more tender varieties will be destroyed or will be injured. We found, on trial, that where one or two applications were made without injury to the plant, a large number of applications blighted the leaves, more or less, and five applications entirely destroyed the early varieties, while large growing and late varieties seemed uninjured even under severe dosing. The growing cabbage furnishes so many hiding places for worms that we can not hope to destroy them all with a single application, however thoroughly it may be made. The perfect remedy should destroy the worms wherever it touches them, and should not injure the plant in the least under any number of applications.

During the strawberry season we noticed that a decaying strawberry had a great attraction for the wire-worm. We frequently found as many as twenty of these worms beneath a single over-ripe or decaying fruit. This suggested that it might be possible to entrap the wire-worm by placing some sweet substance about plants that are troubled by it. Accordingly, on June 25th we placed small lumps of a mixture of molasses and wheat flour about plants of Sweet William in the flower garden, which, from the early spring, had been the favorite haunts of the wire-worm. On June 29th an examination showed that our trap was a success, and we counted thirty-five worms under a lump of the mixture, the size of a silver dollar. We next collected a large number of the worms and placed them with a small quantity of soil on an earthen seed-pan, and placed on the soil a lump of the same mixture, with a little Paris green added. The mixture attracted the worms as before, but, to our surprise, it did not kill them. We confined them for a week in the pan, but did not see that they diminished in numbers.

One part of Paris green mixed with 200 parts of ground limestone proved entirely successful against the larvæ of the potato beetle. Great care is, however, required to secure a thorough admixture of the two substances where so small a proportion of the poison is used. In this dilution Paris green seems to lose its danger to the human family, as we can scarcely imagine injurious results coming from its use, to the careful man.

Bisulphide of carbon applied to the soil about the roots of squashes for destroying the squash-borer, *Aegeria cucurbita*, had no visible effect in diminishing their ravages. Paris green, mixed with water, at the rate of 1 part of the former to 600 of the latter, by weight, and carefully applied to the stems of squash plants, seemed to be of benefit. We commenced using it about August 20th, taking great care to first remove every borer from the stems. We have since found but few borers in the plants treated with it, although the plants

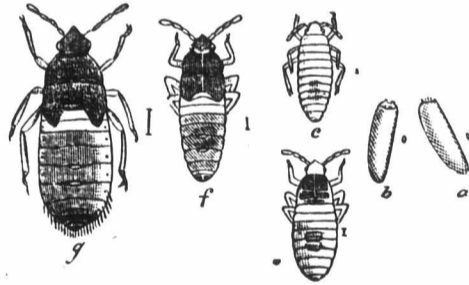
were of those varieties very subject to their attacks. A careful examination made September 5th, discovered but two borers in 8 plants, while other plants in the same row, to which no application had been made, contained from 1 to 3 borers each. The Paris green and water was applied in this case with a watering-pot having a small rose with the apertures facing downwards. The stems were wet for a distance of about two feet from the base of the plants.

We have also made another experiment upon the squash borer, which seems to promise valuable results. This is the application of a solution of a sulphate of iron about the roots. We used this solution upon five vines about August 22nd. The first plant treated was of the Hubbard variety, and four were of the Essex Hybrid. All these vines had been invested by borers, and at the time the application was made four of them were almost destroyed by them. The borers were very carefully removed by splitting the stem lengthwise to the centre and picking out the animal with a pair of tweezers. The solution was then poured about the roots of the plant, sprinkling it upon a circle about four feet in diameter, taking great care not to allow any to touch the leaves. In these plants we have found no borers since the application was made. The vines quickly assumed a deep green color and are still growing vigorously. The proportion used was one-fourth pound copperas dissolved in a gallon of water, and a gallon of the solution was used for each plant.

We do not deem these experiments with the squash borer as in any sense conclusive. We hope to make careful verifications of them the coming season. We offer these results of limited trials, hoping that persons interested in the culture of squashes might aid us by practical trial.—[E. LEWIS STURTEVANT, Director N. Y. Agricultural Experiment Station.

The Chinch Bug.

This destructive bug is attracting the attention of the farmers in St. Lawrence and Jefferson Counties in the State of New York, and Dr. Lintner, the State Entomologist, reports that unless prompt measures are taken to exterminate the pest it will increase and multiply with serious damage to wheat and grass. From inquiries that we have



made, it is to be feared that the Chinch Bug has made its appearance in some parts of the Dominion, and it behooves every farmer to be on the look out for this bug, as when once located it will multiply very rapidly and with disastrous results. To aid our readers to identify it, we give engravings of the Chinch Bug (enlarged), both in its immature stages and when developed; also the natural history of the insect. The Chinch Bug belongs to the half wing class, Heteroptera, and at maturity is less than a fourth of an inch long. The eggs, *a b*, are amber-colored; the young bugs vary from pale yellow with a touch of orange to bright red, while the pupa, *g*, is mostly brown, and the mature bug is black with white upper wings, having two characteristic black spots upon them. Its food is obtained by suction, so that the plants attacked are sapped of their life and not eaten up. The food of the Chinch Bug consists of grasses and cereals. In the Southern States it is three-brooded, but further north it is two-brooded, and such as survive the autumn when the plants or the sap is dried up, so as to afford them little or no nourishment, pass the winter in a torpid state, always in the perfect or winged form, under dead leaves, shells, flat stones, in moss, in bunches of old dried grass, weeds, or straw, and often in cornstalks, in fact in any sheltered situation that it can find. The Chinch Bug deposits its eggs

under ground, and upon the roots of the plants which it infests, and the young larvæ remain under ground for some length of time after they are hatched out, sucking the sap from the roots. In the spring, if a wheat plant that is infested by this insect is pulled up, the roots will be found to be covered with hundreds of eggs, and at a somewhat later period the young larvæ may be found clustering upon the roots, looking like so many



red atoms. The egg is so small as to be scarcely visible to the naked eye; is of an oval shape, and about four times as long as wide. The female occupies about three weeks in depositing her eggs, which number about 500. They require about two weeks to hatch, and the bug becomes full grown in about 40 to 50 days. Few persons in the more northern parts can form an idea of the prodigious numbers in which this insect is sometimes seen in the south and south-western States, marching from one field to another, frequently moving in a solid column, destroying the entire crop in a few hours, and in countless myriads continuing its march of destruction.

REMEDIES.—Burn the dead grass and its surrounding border for about 15 to 20 feet, which can be effectually done by first applying a covering of dead straw; plow the burned area in deep furrows, turning the soil completely over; harrow the plowed surface lightly, and follow with a heavy rolling. An application of gas-lime, about 200 bushels to the acre, would be beneficial in destroying the insects and also as a fertilizer.

A French naturalist says: "The Almighty created birds to protect the grain, vegetables, trees and fruits against the ravages of the insect tribe. For every bird that dies, millions of insects are spared from death, and millions of insects mean famine."

Stable manure is often spoken of as the standard fertilizer and a complete manure in itself. It is so probably for corn, but for wheat and other small grains phosphate of lime is usually needed, and on sandy soils potash. This is shown by the fact that the manure alone creates a heavy growth of straw, without proportionate increase in grain.

All manures deposited by nature are left on or near the surface. The whole tendency of manure is to go down into the soil rather than to rise from it. There is probably very little if any loss of nitrogen from evaporation of manure, unless it is put in piles so as to ferment. Rains and dews return to the soil as much ammonia in a year as is carried off in the atmosphere.

The manure from horses fed on grain heats more rapidly, and is more effective every way than that made from hay and straw. If the pig pen is near the horse stable the pigs will do good service in rooting over the horse manure. Feeding whole grain to horses is under such circumstances no loss, as what is voided in the droppings is gathered by the swine. The rooting over and mixing with the solid and liquid excrement of the pig greatly increases the value of horse manure.

A correspondent of the Chicago Tribune, last week, gives some interesting facts about the present year's results at the Champaign sorghum sugar works, Illinois. The product per ton of cane last year was 62½ lbs. sugar and 6½ gallons syrup. At wholesale prices, 7 cents for sugar and 40 cents for syrup, this would amount to \$6.97 per ton. The cane crop averaged about 9 tons per acre, giving \$62.77 as the value of one acre of product. The cane was valued at \$2.50 per ton, or \$22.50 per acre, which left \$40.27 for manufacture. This year the cane yielded 75 lbs. sugar and 7½ gallons syrup, or \$8.24 per ton, or \$74.25 per acre, leaving \$51.75 for manufacture. The company had a crop of 615 acres this year, against 250 last year. They claimed that it paid, last year, 8 per cent. on a working capital of \$30,000, and this year will largely increase the profits.

Fruit.

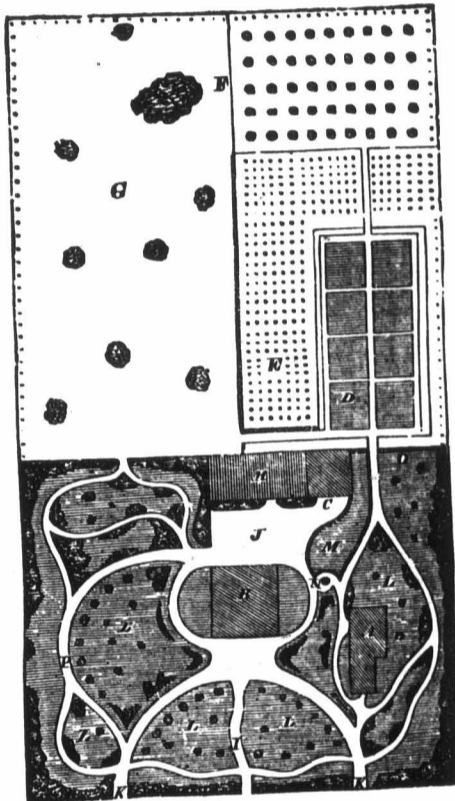
Fruit at the Provincial Exhibition.

Fruit is certainly becoming a popular article of culture and diet in Canada. We have not to go back many years in the history of this country to find a comparative blank in this department of our Provincial Exhibition; and though the year 1883 will long be remembered as affording one of the worst fruit crops that has been experienced since this industry has been established, yet it was quite surprising to see the number of entries made at the Guelph show. The scarcity of fruit probably had the effect of bringing more exhibitors than usual to the front; as every one would argue that he would be almost unopposed, and so carry off the chief prizes. If such was the case there were no doubt many disappointments. The good people of Guelph were evidently unable to estimate the amount of fruits and flowers that would be placed upon the tables. The building, which was a fine new substantial one, was entirely inadequate to the requirements of the occasion. The fruit and flower exhibits were in some instances, from want of space, crowded into one; whilst a second shelf at the last hour had to be improvised under the main one, on which a large number of pears had to be placed, and these were entirely out of sight of the public; this arrangement also gave the judges a great deal of trouble, as all the plates had to be brought out and set on the top of other fruit, so that it might be critically examined, and then replaced in its former darkened and out-of-the-way position. It was noticed the Apples, especially the American varieties, such as Snows, Spies, Greenings, Baldwins, &c., were greatly cracked and spotted, no doubt owing to the wet, cold season, whilst those which originated in England, such as the Blenheim, Orange and Ribstone Pippins, were clean, bright and of fine quality, evidently reveling in a native atmosphere. All the Russet varieties were good, and appeared to withstand the climatic changes better than those with smooth skins. We make these remarks for the reason that it may be well for those who propose setting orchards in exposed positions, or near large bodies of water, to consider whether it would not be well for them to plant such as would withstand damp and storms. Although the apple display was large, the quality as a whole was quite inferior, and it is probable that for this year high prices will have to be paid for an indifferent article of fruit. We also noticed many of the samples were wormy, and such as in a good apple year would not have been tolerated on an exhibition table; it was evident that the number of anything like average samples was very limited. The Grapes, though better than we expected to see, were not up to former years; the fact is, all subtropical vegetable (we speak in the broad sense) forms have suffered from the past cold, backward season, which we hesitate to call summer. Tomatoes, Corn, Melons, Eggplants and Grapes have all suffered more or less from want of sun-heat. The Peach crop was fairly represented, and the Plums only partially. Of these latter great complaints were made of rot, and in some parts, especially the great plum district of Owen Sound, a blight prevailed, which made the plums shrivel and drop, just as they were beginning to ripen—from this cause many growers lost nearly their entire crop. Experience shows that the curculio can be greatly subdued if not entirely overcome by the syringing of the plum trees with a weak solution of Paris green in water, one teaspoonful to a pail, whilst the trees are in blossom; the mixture must be kept well agitated, as the mineral is heavy, and readily sinks to the bottom. This has also been tried in the same way with considerable success as a preventative against the apple worm. The Pear exhibit was certainly very fine, and it was a great pity so many of them had

to be placed out of sight. The holding of the Ontario Exhibition at various points is no doubt doing a great good as a public educator, but if one or more permanent places were selected for it, a good deal of inconvenience would be overcome with regard to buildings and grounds. We had hoped to have seen some samples of the Amber Queen and August Giant, two samples of grapes which Stone & Wellington of the Fonthill Nurseries are putting prominently before the public, but they were conspicuous by their absence. D. W. Bead's new white grape, the Jeseca, was there in good form, ripe and sweet, and though small in size and rather muddy in color, is destined to be a great acquisition as an early white grape. The Niagara and Pocklington were both in good force, but neither of them in first-class condition, owing to the lateness of the season.

Plan for Garden and Fruit Grounds.

In this plan, A, present dwelling; B, proposed dwelling; C, stables; D, kitchen garden; E, dwarf pear orchard; F, orchard for standard fruits; G, pasture for cows; K, K, carriage entrance; I,



main walk to dwelling; J, house yard; H, yard; L, lawn; M, laundry ground; N, pump; O, hedges; P, road to stables and offices.

Horticulture at the Central Fair, Hamilton, Ont.

At the Great Central Fair, held at the exhibition grounds in the City of Hamilton, on the second, third, fourth and fifth of October last, the display of fruit was up to the standard of former years. Much praise is due the exhibitors for the excellent samples which they showed this year. The shortage in the fruit crop has been almost universal this season, and that section of Niagara district which surrounds Hamilton has suffered to as great a degree, in proportion to the productive wealth, as any other district or portions of districts. The great drawback to the production of a large fruit crop this season has been the continued damp weather and cold, windy nights. The absence of the usual amount of sunshiny weather militated much against the proper development of the fruit as its growth progressed.

The horticultural hall was devoted to the display of fruits, along with flowers. Together they presented an appearance of plenty amidst the most pleasing surroundings. A raised stand running the entire length of the hall, and placed in

its centre, was crowned with plants of luxuriant, almost tropical foliage. Beneath the shadow of these beauties of the floral kingdom rested the choicest productions of the orchard, garden and greenhouse. The exhibit of fruit was not alone confined to the centre tables, but was arrayed on long side tables. In the evenings the building was illuminated with innumerable gas jets, making a scene of splendor, more interesting to the florist, the fruit grower or fancier. The groups of red, yellow, green and brown skinned apples, formed a striking contrast to the small families of pink-cheeked peaches nestling lovingly together, or the luscious bunches of grapes almost appearing conscious of their splendor of color. Amidst the many varieties of pears the Bartlett was plainly perceptible by its magnificent size. Taking the exhibit of fruit at the Central Fair as an authority, the quality of fruit in this section this year is not any poorer than that of former years, but the quantity is sadly wanting. The owner of a vineyard near Hamilton sold \$2,000 worth of produce last year and this year his receipts will scarcely amount to \$200, a very great difference. The Niagara district is acknowledged to be the finest fruit growing section in the Province of Ontario, and in all probability is as good in its class as can be found on the continent; but a backward season has its disadvantages that no country can surmount.

The exhibit of Apples at the Fair was equally as fine in quality as that of preceding years. It was noticed that a few crabs and fall varieties were somewhat affected with the scab, but the flaw must be attributed to the cold, damp season. Among the largest displays were the Cayuga Red Streak, Alexander, Baldwin, King of Tompkins, Ribstone Pippin, Northern Spy, Russets, etc. Crab apples were shown in great variety and in various degrees of excellence. Most of the Apples shown were picked from young trees, and consequently were as fine as could be grown.

Pears exhibited a slight indication of improvement in quality over those shown in former years. It has become a recognized fact that seldom, if ever, have either Pears or Apples deteriorated in excellence in this section; on the other hand the standard is invariably retained. The majority of the Pears shown were gathered from dwarf trees. The prize list always announces a prize or diploma offered for a new variety of Pears; but this year the judges were forced to scratch the number. The race for producing new varieties has been continued with so much application heretofore, that growers have found a difficulty this year in securing any departure from the varieties already attained.

Plums were below the standard this year. A few of the young trees bore a fair crop, but the only exception was in favor of the Damsons, which yielded heavily and good. As a matter of course, the exhibit of Plums was generally inferior.

The most noticeable varieties among the show of Peaches was a Chance Seedling, shown by W. P. Strickland, of Hamilton, and it was awarded a diploma. Its high degree of excellence lies in its being larger, better colored, earlier and with a stronger peach flavor than the Early Crawford, although somewhat resembling the latter. It is a Freestone. An interested judge visited Mr. Strickland's orchard to see the Chance Seedling and Early Crawford, as they grew on the trees near each other. He found that the new variety was from eight to ten days earlier than the Early Crawford. The display of Peaches was very fine, although the crop is a failure.

The Grapes shown which were cultivated under glass, were excellent, but the outdoor varieties contained but a few good bunches. The Niagara White Grape was exhibited, but it has not been thoroughly tested, and has not yet become familiar to Grape growers.

A fair display of Quinces was made, but the entries were limited, owing to this fruit yielding better when planted in a clay soil, and very little clay soil being found in the city, there is not much interest taken in its culture.

Two specimens of Monstrosa (Philodendron) Deliciosissima were exhibited, and were regarded as being very interesting in their out-of-place appearance among the standard fruits.

Garden and Orchard.

Orchard Cultivation.

BY T. C. ROBINSON.

To cultivate or not to cultivate,—is a great question concerning our fruit trees. And it is a question that in spite of prejudices on either side, must not be answered at once by a mere yes or no—at any rate, if the trees are of several years growth. There is so much difference in the richness and texture of soils, and in the relative vigor of the trees, and the depth below the surface of the roots, that a knowledge of the particular nature and conditions of soil and growth—as well as climate—should be fairly considered before deciding. It is true that without any special knowledge or thought, one man with heavy, rich loam, will let his trees go to grass, just not too soon to prevent them from getting well established in the soil, and just soon enough to send the sap into fruit buds, instead of too large and watery growth; that he will keep the cattle out long enough to let the trees grow too large to kill by browsing, and turn in the horse just in time to keep down the "codlin moth" by consuming wormy windfalls. It is true also that another man may be impelled to grow vegetables among his trees on sandy or gravelly soils, and by the abundance of manure necessary to vegetable culture, further supply the conditions essential to success. And so without much merit of the kind, both may literally tumble into crops of fruit, choice and abundant enough to excite the admiration of all beholders. No wonder each man praises the method, or lack thereof, which brought him success, and that opposite schools of horticulture have resulted! But the positive conditions of success in such extremely opposite cases are not far to seek; and they should be sought; for the rule of chance which may bring two such men success, may prove but a rule of blunder to ten of their neighbors, who happening to choose similar courses under dissimilar conditions, inevitably land themselves in failure.

Rich, moderately heavy loam is doubtless excellent orchard land—if water does not lie near the surface, and if the winters are moderate. The careful cultivator who plants therein will doubtless witness with satisfaction the vigorous growth and green foliage of his trees. But as the rolling seasons bring them to bearing size, he may still find to gladden his eyes nothing but leaves; and it is well if the sappy redundant growth does not burst and blight after even moderate winters. Now if he could only do on a large scale, as the careful gardener often treats a few choice bushes—if he could pinch or clip the ends of all the vigorous twigs in midsummer, the growth thus checked might be diverted into fruit buds, and would result next season in larger crops and finer specimens than could be produced by any mere treatment of the soil.

But farmers have not time to go to the trouble of twiggling every branch. Yet I ask special attention to this point as marking a principle that seems to me of great importance. I state it thus: fruiting as well as healthfulness is decidedly benefited by the utmost amount of sap that can be secured by the roots in rich, deep, moist well-cultivated soil—provided this sap is properly matured by coming in contact with air in the leaves. But as the farmer cannot take time to force the general supply of sap to enter the leaves by "pinching" the new growth, he may accomplish nearly the same thing by seeding the orchard down, and ceasing to cultivate; the new growth is then checked by the grass roots taking up nearly all the supply of moisture at midsummer, before it can reach the roots, and the sap resulting from fall rains consequently is attracted into the leaves, and thence develops fruit buds as soon as it returns down the leaf-stems.

Yet the tree cannot bear fruit for years continuously without a fairly vigorous wood-growth in all its parts. What is to be done when ton after ton of luscious Apples and Pears, taken to grace our tables, reduce our doctor's bills and swell our purses—shall have so far exhausted the original orchard soil and exceeded the yearly fertilization of rains, snows, decaying leaves, and inherent chemical action, as to leave us with sickly foliage, feeble growth and fruits so small and "runty" as to shame our pride and kill our profits? Just here again is where the texture of the soil must guide us, and

where many an ugly but really noble old orchard has been sacrificed through lack of a little observation and reflection. If the texture of the soil is stiff: if it is shallow and underlain by anything like "hard-pan," then the roots are probably all near the surface, and the shallowest plowing will cut, and tear and render useless all the sap-gatherers, and the melancholy slow growth of the trees will fail for years to improve, or will even be succeeded by a more melancholy dead stop! Yet, we hear of cases where whole wagon-loads of roots have been taken out of an orchard, to the consequent benefit of the crop. How is this? Simply doubtless because some soils are so deep and mellow, and yet so moist and well drained, that multitudes of roots spread all through it—deep as well as shallow—and the removal of the top layers still leave the trees with plenty to depend on below, until those cut can send out new fibres. Now, if your soil is like this, go ahead; tear it up and keep it in cultivation, to the great increase of vigor and renewed productiveness of your trees; provided always that enough roots remain below the plow to keep the sap moving. But, as previously stated, no such treatment will answer with soils whose shallowness and hardness have kept the roots near the surface. Only one word conveys the remedy for such a case, that is MULCH. If good manure, or poor manure, or unleached ashes, or even straw or sawdust, can be thrown on as far as the roots extend, in such quantities as to kill the grass, and keep the surface loose, the benefits of returning health and fruitfulness must result, to a degree, and with a rapidity probably proportioned to the richness of the material used, and the completeness with which the grass is kept down. The mulch should be renewed as often as the grass tries to start; or the harrow and cultivator may be run through after the grass roots decay, if the ground is not too hard.

The case in which the soil is very light seems to demand a very different course—constant cultivation and frequent manuring. Doubtless mulching would be of some use; but grass roots have a vigor and persistency on such soils that will show little discouragement in the face of treatment that would utterly kill them on heavy land. Don't coax wire-grass with top-dressing; plow it down: when it is down keep it down with the cultivator, and put your manure under or on top as you feel inclined; but you must manure and you must cultivate to secure best results on such land.

A good rule for all orchards seems to be: Never plow twice when once will do. Some people grow other crops in their orchard—I do; but crops that can get along with the use of only such implements as run no deeper than the cultivator, will naturally result in least injury to the roots. Another plain rule for orchard culture naturally occurs here: Grow no crop near the roots except what can be both cultivated and manured.

In this connection there is manifestly a great difference in different kinds of fruits to be taken into consideration.

The plum has a greater tendency to fruitfulness than seed fruits, and may be planted freely on the richest and heaviest soils on which it will stand the winter. If it lives it will bear, no doubt—curculio and black-knot not interfering. The peach has, with equal tendency to productiveness, a greater tendency to form too tender growth on rich land; it may be put on poorer, lighter soils than the others.

But even in the same class of fruits we find varieties like the Northern Spy that come soon into bearing on light land, and slowly on clay; and others like Wagner and Duchess of Oldenburg, that bear early and persistently anywhere; the latter being benefited by cultivation on medium soils, and the former hindered from bearing; so that the problem of cultivation must be decided with some regard to the varieties planted.

Nothing has been said in this article about pruning, after the orchard is out of bearing, as this seems to be required in about the same way and degree on all soils, and may therefore be treated as a distinct branch of horticulture.

As a rule large apples do not keep as long as small ones of the same variety. On the other hand, the well-formed but very small and unripe apples often found in the centre of a thick top are not desirable, as they are never good eating, and they often wither and fail to keep well. Overgrown apples, even though they are first-class in other respects, should usually be put with the number twos.

Winter Protection.

BY HORTUS.

The most trying months in the year on plants and trees are November and March, and the open weather we occasionally have in January and February. During these periods the prevailing weather is hard, frosty nights, followed by sunny days with an extreme heat at noon. From fifteen or twenty degrees of freezing temperature at midnight, to sixty or seventy degrees of heat at noon-day is quite a severe contrast and a trying ordeal for exposed plants and trees to pass through. As a general fact these extremes cause all the injury done to our gardens, so little care is paid as a rule to guard against this weather, and all this time do we so often see plants which have been dearly bought and much time and labor spent over, exposed without the slightest protection. The finest litter or mulching for protection purposes is the fallen leaves, "nature's own covering." Though all leaves are suitable, still the best are the largest kinds, such as the Maple and Chestnut. These are generally plenty to be had either around yards or lanes, or in convenient woods, and a very pleasing and not laborious occupation it is to gather them. For covering strawberry beds, and all low growing perennial and biennial plants, they are invaluable. Clean, with no noxious seeds to sow the ground, they remain till spring, when they can be raked off and mixed with manure for fertilizing. It will be necessary to spread a few branches on them to hold them from being blown about by winds. Pine branches make a capital protection for large plantings, are easily procured, laid down and taken away. In lieu of either leaves or brush long straw manure answers capably.

Low growing shrubs, like Roses, Hydrangeas, Dentzias, &c. require the tops bending down and covered with straw litter. Grape vines, Clematis and other half hardy climbing plants should be carefully taken down, the necessary trimming done and then be neatly straightened into shape, tied together near as convenient without breaking, bent to the ground if possible, and covered. When it is not convenient to have any mulching, covering over with soil is as good a plan as any, and is always handy. Banking up, keeping banking up, over the tips of the raspberry canes and around the trunks of the trees and bushes. You cannot do too much of this work. It is also a good protection against mice, who commit the most damage in winters that have the most snow. A very little will protect almost anything and a common practice amongst many good gardeners, is simply to bend the tips of canes and stems down to the ground, holding them there in place by a spadeful of earth. Of course, when we have snow that is the best protection of all, but as we have already said, it is the time before snowfall, during thaws and when "winter lingers in the lap of spring," that causes the most damage; and another necessary protection is proper drainage—both under-drains and surface-drains should be looked after and made. Low places, and particularly walks, should have surface drains made from them to carry off the rain and snow-water, that otherwise would remain and cause winter killing, as it too often does. Twisting loose ropes of straw around the trunks of young trees is a good plan to protect them. It will be found profitable to thus protect and cover everything, as we do not know of anything causing more disappointment to the farmer than winter-killing or upheaval. Clayey soils must have protection to prevent upheaval. If the annual loss of stuff by being winter-killed could be calculated at its fair value, it would make a gross amount that would be alarming, and this leads us to the most important feature in winter protection, which is shelter belts and wind breaks. Therefore plantations of trees should be made at once, when they are not, for very little reflection on the part of an observer will convince him of the great value trees are to the country, in ameliorating the rigors of severe winters, by arresting winds and giving shelter, but this is too large a subject to enter upon now. I will sum up by repeating: Gather the leaves in. Mulch everything. Manure plantations of currants and raspberries. Top dress aparagus and rhubarb beds. Under drain and surface-drain. Don't put off anything to the spring that you can do this fall—"a word to the wise is sufficient."

Poultry.

Aylesbury and Rouen Ducks.

The accompanying cut represents two kinds of our most profitable and leading ducks. The distinctive characteristics of the Aylesbury duck are great size, immaculate purity of white plumage, a large, broad, pale flesh-colored bill, a dark, prominent eye, orange legs stately carriage, and excellence in quality as market birds. Aylesburys are, if well fed, prolific layers of fine eggs, the shells of those laid by the best strains being of a clear white. As sitters, Aylesburys are better mothers than Rouens, not being so unwieldy in their actions. The former are also noted for their hardiness and early maturity. This is a large breed, weighing 17 to 18 pounds to the pair. By careful feeding they may be induced to begin laying by Christmas, and if a warm house be had and the eggs set, and the ducklings kept rapidly growing, in eight or ten weeks they will be ready for market. The Rouen duck is simply a variety of the common domesticated Mallard, increased in size by abundant feeding and the careful selection of breeding stock, and corresponding precisely with it in every respect in the details and marking of the plumage. The head of the Rouen duck is long, fine, and of a rich, lustrous green, the wings are of a grayish brown, mixed with green, with a broad ribbon-mark of rich purple and metallic reflections of blue and green, edged with white. In weight Rouens exceed that of any of the other varieties; they are more lethargic and consequently more speedily fed than any others. They lay great numbers of large eggs, the average weight of which should always be above three ounces. The color of the egg is a blue-green, the shell being considerably thicker than in the eggs of the Aylesbury breed. As regards the consumption of food, the Rouens require more than the other varieties.

Poultry at the Western Fair.

This year the commodious building in which the poultry exhibit at this fair generally took place was literally given over to dogs, and the poultry show had to be held in a less convenient building, which does not speak very highly of the wisdom of the directors advancing the interest, to say the best of it, of a lot of dog fanciers, to the detriment of one of the best paying (although small) industries on the farm. The exhibit, on the whole, was very good, but the same defect noticeable at all the fairs was apparent here, namely, the smallness of the coops. The birds being shown in pairs, the cages were entirely too small; this was especially so in the large classes, particularly the turkeys and geese, which were cramped up with scarcely room to turn around.

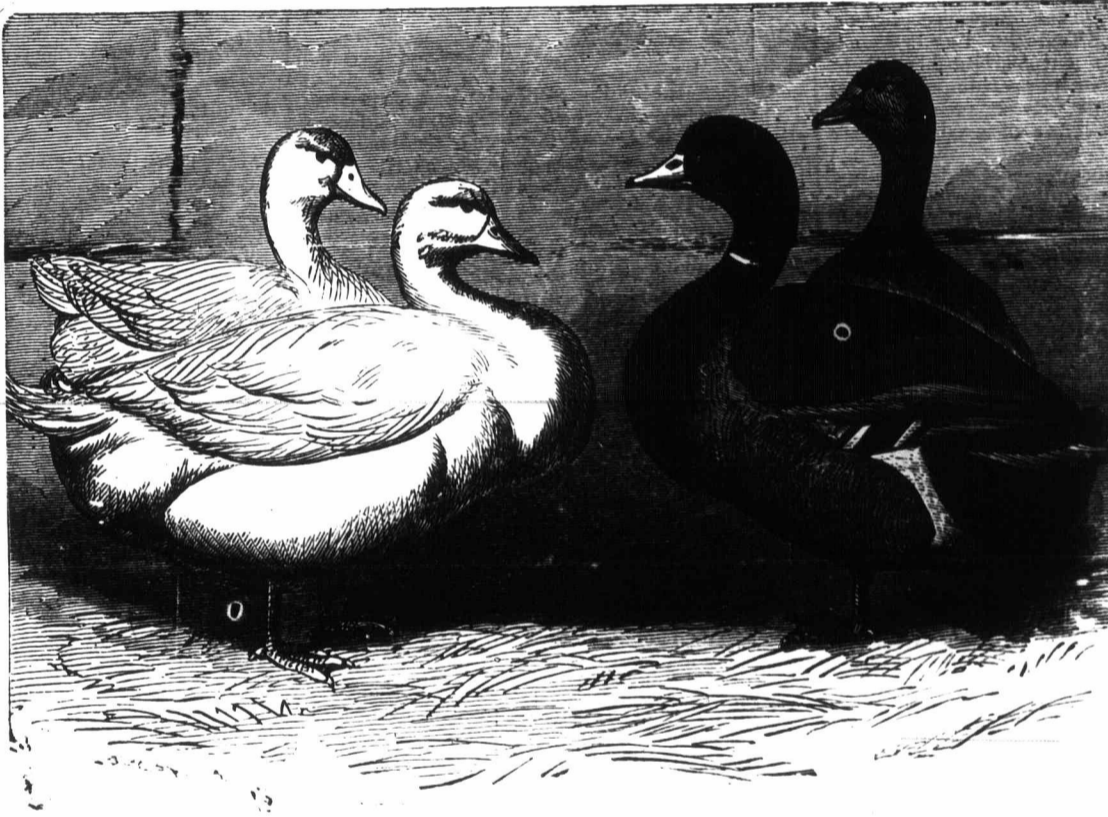
Showing the birds in pairs did not seem to be in much favor with the majority of exhibitors, many of the best birds receiving no prize because its companion was not up to the mark. It would be far better to adopt the plan of the Ontario Poultry Association, and award the prizes to single birds. The giving a third prize in most of the classes is unnecessary, to say the best; it is a doubtful

honor, and is frequently the means of a prize being given to a worthless bird. The fair taking place so late in the season, the majority of the birds were out of feather, and were frequently the subject of uncomplimentary remarks from the uninitiated, but if the same birds were seen in all the brightness of their plumage, a very different opinion would be expressed. The crowds which filled the building during the time the poultry was on exhibition, ought to convince the directors of its popularity.

Green Food for Winter Use.

BY HENRY IVES.

In addition to the supply of green food put in store for poultry in the winter, as recommended in September number of *ADVOCATE*, under the above heading, I would recommend a practice which I followed for years in renovating my garden plots, which also proved to be of great advantage to my stock of poultry by way of "Green food for winter use," and as every lover of poultry must be also interested in good garden management, I will state how I made this one practice quite profitable



AYLESBURY AND ROUEN DUCKS.

for both. The greatest need of one's garden is to have a change by seeding down and lying more or less time under a dense growth of some grass, or grain, to well shade the soil, and green manure it either by top dressing it or by its being plowed under. I do this, besides having the full annual use of my garden, by putting all plants and vegetables that are to come off early into one section, or half of the garden; these will be cleared off, and the ground sowed to oats or rye, or both, as early usually as middle of August or first of September. This will grow to make a heavy vegetable growth, covering the ground, keeping it from going to weeds or barrenness, and will very much renovate the soil ready for another season's use. Then the next year to reverse the order of planting, that I can serve the other half of the garden in the same way; thus once in two years all the garden will have the change of a green crop for rest, and for plowing under. As I adopted this plan for my garden management, I found incidentally that it was a great source of "green food" supply for my stock of poultry in the winter. As most of gardens are near to the barn, the hens will delight to come out all mild days of the winter and get a good, fresh airing, while plucking and eating quite greedily of the leaves of such a crop growing near by within their reach. For this purpose, as well as for the stocking purpose, oats will make about

double the growth that any thing else would for the fall, and they usually keep green until after Christmas; then for the rest of the winter they stand stiff and erect, so as to hold the drifting snow and keep the land well blanketed from winter blasts, after this, for spring tillage. Land treated in this way will be more friable and cleaner for the following season's tillage, and the hens will commence laying earlier, and be more productive for being treated with this growing green winter food. But for all contingencies of "spells of weather" and the like, a stock of green food should be put in store besides, as recommended in article referred to.

Poultry Past and Present.

In an address before the Indiana Poultry Breeders' Ass'n, Mr. A. M. Halstead, of Rye, N. Y., compared the poultry and poultry management and production of the past and present, as follows:

The extent and importance to which the interest has grown is almost incredible: especially so to those who remember how, in their boyhood days, the chickens were looked upon as a necessary nuisance; to be tolerated because the female portion of the household looked to them for a supply of pin-money.

In those days—and those, to us, by-gone days are still to be found exemplified in many sections of the country—the fowls were regarded as a species of freebooters, living by their wits and preying upon the industry of the men-folks. They roamed when and where they pleased. If perchance they made too free with the newly planted garden, the dog was called to oust them, and the children encouraged by their elders, pelted them with stones, sticks, or whatever was most handy. They roosted in summer in the trees around the dooryard; in winter, under hovels and sheds, on the carts, wagons, ladders, or wherever they could find a place.

For nests they had the whole farm. The manger in the stable, the hay-mow in the barn; the old sleigh under the cartshed;

the blackberry patch, in the corner of the hog yard; the brush heap, in the wood yard or the high grass in the neighboring meadow. Semi-prodigious egg hunts were made and the eggs obtained were sent to the country store, and traded off for needles, thread, or other etceteras, many of these eggs proving to the final possessors too old for omelets, and too young for broilers.

With the young chickens the chances were the same. If a hen succeeded in hiding her nest, so neither human nor animal foe discovered it, she usually brought out a brood of chicks nearly as wild as young partridges. Later in the season, as eggs became more plentiful at the stores, some hens were set, and as fast as the chicks got old enough, they were killed and sold as broilers those which were too wild to catch, and too late hatched to bring good prices, being left for stock for the next season. This was the only "survival of the fittest" known to the poultry keeper of those days. As to feed, the wood pile, barnyard, hog-pen and kitchen door steps, were the "restaurants" of the summer; while in winter a few handfuls of corn in the morning were thought to be all that was necessary.

The weight of the fowls of those days was from three to three and a half pounds. Occasionally a "bouncer" of five pounds caused the neighbors to inquire into the "why and wherefore" of its superior size.

The eggs averaged twelve to the pound and were not over plenty at that. Ducks, geese and turkeys were rather better cared for, but even they received only enough attention to preserve their lives, which would certainly have been lost were they given no more care than the chickens.

Compare this with the poultry keeping and breeding of the present day, and one can quickly realize the great improvement that has been made. Eggs average eight and nine to the pound, and frequently by care and selection of stock, an average of seven has been produced by careful breeders. Broilers are made to weigh one and a half pounds at six weeks old, and adult fowls frequently dress eight and nine pounds, and I have known instances of twelve pounds and over.

The same ratio of increase is noticeable in turkeys, ducks, and geese. Since the poultry interest has assumed such importance, we often find turkeys in our markets weighing twenty to twenty-five pounds. Fifteen to eighteen pounds were formerly considered extraordinary weights for turkeys, and if a pair of ducks reached seven pounds, the producer was well satisfied he had something above the average. Now, ten pounds is not unusual. Last fall I killed both Rouen and Aylesburys, which at four to five months old dressed ten pounds to the pair. Twelve and even fourteen pounds have been recorded as the dressed weight of full grown specimens.

The same in geese—the improved breeds, Bremen or Embden, and Toulouse—twenty pounds is not at all unusual in our Christmas markets. Pairs of the latter have been exhibited in England which weighed *alive* fifty-six pounds; nearly or quite double the weights of good specimens twenty-five years ago.

Nor is the improvement confined to size and weight. Quality, as well, has been looked for; a plump-bodied, full-breasted, yellow-fleshed, and juicy, tender-meated chicken, now takes the place of the lean and tough broiler of by-gone days. In eggs, the improvement in quality is equally noticeable. The idea that "an egg is an egg" no matter whether fresh or stale, whether stringy or tasteless, or meaty and rich, has exploded. We find as much difference in the quality of eggs as with any other article of food; the quality being practically under the control of the breeder. If the fowls have to shift for themselves, getting a precarious living in the barnyards or the stubble-field, the eggs do not have the rich, melting quality which results from a good, generous diet of grain or prepared food. We might as well expect the same quality of beef in the half-wild steer of the prairies, as we get in the well fed thoroughbred Short-horn.

In the egg-production also is the improvement apparent. In the "old times" to which I referred, it was a good flock of fowls which averaged fifty eggs per hen, per annum. Now an average of one hundred is esteemed a low figure; one hundred and fifty per head being considered the necessary number to entitle a flock to be called *good* layers. We frequently hear of instances where an average of two hundred and upwards have been produced by small flocks, but these are exceptions of the rule.

A farmer who makes a specialty of raising beets is enthusiastic over the results of a plentiful use of leached wood ashes well spaded into the soil and thoroughly mixed with it.

The best time for cleaning up an orchard and getting it in good shape for a crop of fruit next year is in the fall after the fruit is harvested. If the orchard is thick one should be especially careful not to let old barrels, boxes or piles of rubbish lie under the trees. These soon begin to decay, much to the detriment of the fruit, which is then doubly liable to mildew and to become scabby. Apples always seem more attractive and palatable if grown in a clean, neat orchard.

In the experiments of Sir J. B. Lawes, of Rothamsted, England, he finds this year that his experimental plot of mangles planted for forty years on the same ground is much more thrifty than his main crop of thirty acres to which he applies both barnyard manure and nitrate of soda. He attributes the superiority of the small plot to the fact that every weed was destroyed as soon as it became visible. In this wet season he believes the weeds in the main crop took more nitrogen than was supplied by the fertilizers applied. This is worth thinking of by farmers. Manure costs too much money to allow their neutralization from lack of clear culture.

Sints and Selps.

A Method of Hanging Beef and Hogs.

An easy method of hanging slaughtered animals is shown in the accompanying engraving. The device is made of three pieces of hard wood scantling of the desired length, and fastened together at one end by an iron rod. Two of the scantlings are fastened together by cross-bars, with their lower ends spread a few feet apart. A hook is fastened in the lower cross-bar, to which the ani-

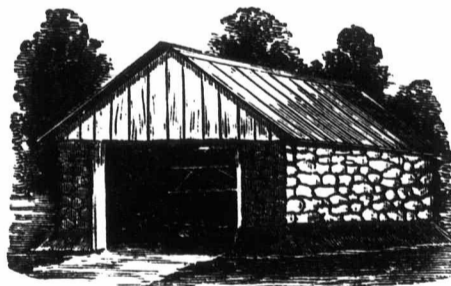


mal is fastened by the gambrel when suspended. To hang a hog, the tripod, or frame, is laid upon the ground with the single "leg" extending backward. The animal is attached, and as the frame is raised the rear leg is brought in to support it. The tripod is easily made, and folds up into small space when not in use. For a heavy beef, a windlass may be attached to the lower cross-bar, by means of which the animal can be drawn up after it is partly raised by lifting the tripod. The larger the animal the greater needs to be the size of the frame.

A Farm Implement House.

One of the most useful and money-saving buildings that a farmer can place on his premises is a spacious and convenient tool-house. The lack of it is why so many farmers neglect protecting their implements when not in use. A farmer needs a tool-house almost as much as a horse-barn or wood-house.

The illustration is suggestive. This house is adapted to a locality abounding with stone; the walls are made of stone, laid without mortar; the foundation is placed below frost, and the earth is banked on the outside to further protect them and throw off water. The top of the wall is leveled



with mortar, and a 2-inch plank laid on, to which the rafters are spiked. The latter are placed on the inside by nailing cross-strips. The roof may be made of the cheapest material, which varies with localities. There is one window in the end opposite the door. The doorway should be 12 feet wide, to admit a reaper, and, if the location is not too much exposed, there is little need of doors. The ground is the floor. The walls are 6 feet high, and the structure should be 20 feet wide by 30 or 40 long. Such a building costs but little, and it will save many dollars and many steps in the course of a few years.

Bands on apple trees are a positive detriment, unless they are promptly attended to. In an orchard in which the bands were thickly studded with the old cocoons of the codling moth, the bands make good breeding places for the moths if not examined every seven or nine days. By all means do not encourage them by neglecting the bands if they are used.

Correspondence.

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

We do not hold ourselves responsible for the views of correspondents.

SIR,—This spring I received from you, by mail, one very small plant of Russian Mulberry. I planted it in good soil, rather sheltered; it made (27) twenty-seven inches new growth this summer.

Yours truly, T. G. S.,
Fitzroy Harbour.

SIR,—Will you kindly inform me if and where I may procure the seeds of the following trees:—Scotch and Austrian pine, American and European arbor vitae, spruce and white and red cedar; also an assortment of hard wood tree seeds. By answering you will greatly oblige,

INDIAN HEAD.

[We have repeatedly answered this question. Seeds of this kind can be obtained from any reliable dealer.]

SIR,—Would you please inform me through the *ADVOCATE* the best way to exterminate wild oats.

R. T., Hawksville, Ont.

[Like exterminating all noxious weeds, culture is the only remedy. Summer fallowing, if they are very rank, is a good plan. Plow the land early in the spring and harrow so as to get the seed to germinate; let it grow and when the plant is advanced plow down again. Follow this and your wild oats must die.]

SIR,—A neighbor of mine having received a quantity of Susy potatoes, gave me four ordinary sized ones on trial. Having cut them to the order described in your paper of May last, on page 145, I planted them in hills, about ten inches apart, upon June 4th, and dug them on Sept. 24th, receiving thereof sixty-six pounds. They prove to be a good table potato.

D. R. F., Prospect, Ont.

SIR,—Joshua Tato, Esq., of this place, imported a quantity of Scotch Tartarian oats last spring, and when threshing last week he asked Mr. Hunter, who was threshing for him, to count out some sheaves of an ordinary bind for the purpose of seeing how they would yield. He did so, and from 23 sheaves he threshed 4 bushels and twenty-one pounds, and they weighed 40 pounds to the bushel. Who can beat this? He has since sold one hundred bushels at \$1.50 per bushel.

G. C., Rosemont, Ont.

SIR,—In answer to G. W. B. S.'s inquiries about the free grant land on the Manitoulin Islands. There is no free grant land on the islands; the land on the islands is all Indian land, and is sold at 50c. per acre by J. C. Phipps, Esq., Indian Agent, Manitowaning. The farming land is mostly taken up, but there is considerable land here that would be very good for dairy purposes, or sheep farming. Improved land is cheap here, and also of the best quality. The soil is principally clay loam. We have the finest climate in the Dominion, and good water, and the summers are cool and the winters are pleasant, and not so changeable as in some parts of Ontario. We think we have the best country for stock raising and sheep farming in the Dominion. This island is getting pretty well settled and cleared up, and there are some excellent farms here with good buildings on, and there are a number of farms where there are reapers and mowers, &c., in use, and our roads are getting pretty good. We have had considerable money from the Local Government expended on colonization roads, and we are confident in having more money expended in the next four years. The crops for the last two years have been good. Any person wishing more information about the Manitoulin Islands can get it by writing to B. Bock, Providence Bay P. O. It would take up too much space in the *ADVOCATE* to give a satisfactory description of the islands and the products.

B. B., Providence Bay P. O., Dist. Algoma.

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SIR,—I am well pleased with your paper; there is a great deal of information in it. Will you kindly answer me the following questions in your next number:—How much grain will it take a day to keep a steer two years old in good condition till next spring, with hay and straw cut; and what would be the cheapest grain to buy? I am going to winter over a few and fatten on grass for the English market. By answering the above you will oblige an old subscriber.

Y. W., Colborne, Ont.

[There is no object in merely keeping a two-year old in condition; a little more feed would keep him in condition, and also lay on fat and flesh. There is really no profit in keeping over animals more than two years; all the cream is in fat animals of this age, which are fit for the butcher. The more liberally you feed your steers this winter so much more will they be advanced for grass feeding, if this is your object, to turn them out in the beginning of June next. Don't attempt to merely keep stock in condition, but feed for the best results of both developing fat and muscle. You could likely keep a steer in condition at a straw stack, but don't do it. For the best returns in feeding we would recommend 14 lbs. of the various cereals—such as corn, oats and pea meal, with abundance of good hay or oat straw, say 20 lbs. of best clover hay, or 10 lbs. of timothy; 18 lbs. of oat straw, or 20 lbs. of wheat straw, mixed with 8 lbs. of timothy or good meadow hay. These rations are not given to be followed strictly, but only as suggestions of the proper combination of food for fattening cattle. Let our correspondent use his own judgment on this feeding question, but feed plenty.]

Lessons from the Fairs.

SIR,—Now that the fair season for another year is over, it may be well to reflect and enquire what lessons they have taught, what new features, if any, have been introduced; what have been the defects in the management of our fairs, and what changes are required in the interest of exhibitors, who really make the show. My remarks at present apply only to the department of live stock. And, first, I would suggest that, as far as regards the large exhibitions, a more select class of exhibits might be secured, if large premiums were offered, and a corresponding entrance fee required. This would tend to check the practice of entering a large number of animals merely for sale, and with no intention of placing them in competition.

(2.) A better classification of the different breeds should be insisted upon, and to this end intelligent and practical superintendents should be appointed, and should be on hand before the stock begins to arrive, so as to direct them to their places at once, and thus avoid the trouble and annoyance of moving from place to place.

(3.) Where the publication of a catalogue of the stock entered is decided on, a fixed time should be named, after which no entries on any pretext should be received. Without such a rule strictly enforced a catalogue is only a delusion and a snare. Then when the catalogue is prepared, unless numbers are placed on the animals to correspond with the numbers on the catalogue, the whole labor and expense of preparing the catalogue is wasted, as was the case at the Provincial Fair at Guelph, where stacks of printed catalogues were prepared, and could hardly be given away because of this defect.

(4.) No niggardly policy should be allowed in regard to supplying bedding for the stock, as was seen at Guelph, where valuable animals that were used to being bedded knee-deep in straw at home, where visitors are seldom expected, were, while on exhibition at the fair, compelled to lie in the dirt, or on the bare ground. Surely straw is not so scarce or so dear that a sufficiency and even a surplus could not be provided.

(5.) In certain classes of stock (if not all) it may be well to consider whether it would not be advisable to make a separate list of prizes for Canadian bred animals, as well as one opened to imported animals. Notably in some of the classes of sheep and hogs the exhibits this year and last were almost entirely imported, and so highly fed and fitted are these in the hands of the trained shepherds of the old country, that our farmers have in many cases become discouraged, and have ceased to bring out stock of their own breeding. The necessity for this change has already been recognized and provided for at the large exhibitions in the classes of heavy draught horses, and at several county fairs where prizes are given in the sheep

classes for Canadian-bred and also for imported stock.

(6.) In regard to the appointment of judges, the time seems to have arrived when the one-judge system may safely be tried, on a limited scale at least, and in certain classes, where competent and reliable men are available. This system was adopted in the case of two classes at the Toronto exhibition this year, where Mr. Cooper, of Pennsylvania, was invited to judge the class of Jersey cattle, and Mr. Butterfield, of Sandwich, the poultry classes. And at the Norfolk County Fair the pigs were judged by Mr. J. E. Snell, of Edmonton, and the poultry by Mr. Bogue, of London. I have reason to believe that in each case there were fewer complaints on the part of exhibitors than are usually heard where three judges have done the work, and was assured by at least one of the gentlemen who was chosen thus to act, that he never felt more comfortable on an awarding committee than he did on the committee of one. That while he felt a due sense of the responsibility resting upon him, he also recognized the fact that he was trusted to act honorably and impartially, a fact which is calculated to call out a man's best endeavor to deserve the confidence reposed in him. Besides, there is the fact that he knows he must shoulder the whole responsibility of the work, and cannot shift it on to others if he were disposed to do so, and as is too often done in the case of three judges when an unpopular award is made. I would not advise the wholesale adoption of the one-judge system, but certainly do think that it should have a fair trial on a limited scale, at least. Care should, however, be taken that only competent men are appointed, and no man should accept such an appointment unless he has entire confidence in his judgment in the classes on which he has to act.

Yours, etc.,

ON LOOKER, Edmonton, P. O., Ont.

A Plea for Quarterly Fairs.

SIR,—The following suggestions are submitted for the consideration of the farmers of Ontario with the belief that, if put in practice, they would be mutually beneficial to all concerned, and save much expense and be the means of putting an end to a pernicious custom that exists in many counties of the Province. We are fond of copying the Old Country customs, and, to one who gives this subject mature thought, there will appear no good reason why we should not adopt their system of holding periodical fairs for the sale or purchase of farm stock, instead of the prevailing plan of making auction sales, or forcing those who want to purchase to canvass the country to get a supply. That our people, during the long evenings that are approaching, may have an opportunity of discussing the matter, we shall briefly examine the merits and demerits of both systems and try to show the advantages to be gained by fairs at stated times.

There are two seasons at which fat cattle are put into market; one to supply the home demand of towns and cities, and one to supply the export demand. The first extends from Christmas till about the first of February; the second, a week or so before the opening of navigation, or about the second week in April. Two other seasons at which cattle for grazing and grass beef must be put in the market; for graziers, the demand begins about the first of May, and for grass beef, after midsummer. The plan at present is for buyers to send out a set of runners through the country to find what can be had, and some of these of light calibre take trouble to belittle the stock, or spread reports of dull markets abroad, the effects of which have had a tendency to create a very small public opinion of the veracity of those travelling agents, and to make farmers reluctant to sell until, perhaps, two or three sets have gone the rounds, and after two or more of the dealers themselves have interviewed the owners of the cattle. Such a mode of sale has many objectionable features, the principal of which are that it creates a spirit of distrust and a run about way of getting at a fair competing market. For the disposal of stock for wintering over, or graziers for the succeeding summer, the prevailing mode in many localities is to make auction sales on 'ten months' or a year's credit and take joint notes for security of payment, which is very objectionable: first, because it encourages a system of going in debt; second, because many on prospects and probabilities of a coming twelve months, purchase what they would not do if they were paying the ready money, and in many cases the probabilities are reversed, and

loss is the consequence; third, some, to insure a brisk sale, supply an abundance of cheap whisky and other excitable, so that purchasers do not so carefully examine the quality of stock, and are not particular for a few dollars since there is a year's credit, and you know that people in that mood are always wealthy and have no poor relations; fourth, because every purchaser has to give a joint note, someone else becomes a debtor for what he did not purchase and will derive no benefit from, and an adverse season or some unforeseen event may render the buyer unable to pay, when the accommodating neighbor will have to pay the debt; fifth, much time and expense are wasted in this way and a hard precedent established.

It will be asked how are we to remedy this state of things; if a farmer finds that he is over-stocked what is he to do, if no jobbers or buyers come along? Certainly the intelligence of the farmers of Canada can suggest a remedy, and, for their consideration, the following plan is proposed:—Let two or more central places in a county be selected where yards and accommodation can be obtained. Advertise in agricultural papers, at least two months in advance, that a fair is to be held for the sale of stock, which may be continued for two days, if one is found to be insufficient, so that there may be ample time for buyers and sellers to make up their minds and see what they are doing; make all grades and kinds of stock saleable in their season at these fairs, except heavy stalled cattle that are not easily or conveniently moved. Make these times and places of sale permanent institutions, as they are on the other side of the Atlantic, and every one would soon be pleased with the change, and many of the demoralizing influences now so prevalent would cease. The matter could be taken up by our county agricultural societies, and the places, times and number of fairs in the year fixed, which might be three or more, as found most suitable, though three would seem to be the least number required to dispose of the class of cattle that are easily moved. One in spring, say between the middle of March and the twentieth of April, at which farm horses, steers, heifers, and springers would be in demand; another some time between the middle of July and first of September, where grass-fed beef stock would form the central figure; and a third about the first of October, for the supply of stock to keep over winter or be sent to the stalls of the distilleries.

By this plan a fair competing market would be open to all, and, more than that, farmers of different localities would have a good and profitable opportunity of seeing the produce of their neighbors' breeding and feeding, while buyers could make better selections and spend their money to much better advantage, and, in fact, could afford to give better prices since they would be saved the expense of keeping a set of agents to drive continually through the county in search of stock.

Farmers and stockdealers, think this matter over, discuss it, and, if possible, be prepared to put it in some permanent working order, and you will have all the little assistance at the disposal of one who has given the scheme some thought and has much faith in its good results. Respect fully submitted by

M. McC

Huron County, October 29, 1883.

SIR,—Perhaps a line from a friend "by the sea" would be acceptable at this time. The crops are all housed except turnips, and they are not grown to any extent. Oats will be above the average. Wheat fair. Potatoes, some report very good and some light. Buckwheat very good; that is a staple crop. Our short season prohibits the sowing of winter wheat. It is all spring wheat down here. The summer and fall has been very dry. The crops have all been housed in splendid condition. But the want of water is seriously felt, most of the water mills having been forced to stop; wells are dry and streams are low. The pastures have suffered, which makes butter scarce, and stock will come to the barn in poor condition. The nights are very cold, but days are fine. Since subscribing for the ADVOCATE, eighteen months ago, farming has taken a stronger hold than ever on me. It seems as if we are only children in the business, just learning the alphabet of farming. Some say, when I praise the ADVOCATE to them: "Oh, it's no good, we can't think of farming as they do in Ontario." Well, suppose we can't, there is much in the paper to set us to thinking. The trouble is, farmers as a rule do not think enough. If they would sell off their scrub stock and spend the money in a few well-bred animals; farm less ground, and do it better; keep less

horses and more cows and sheep, and then take better care of them, there would be less complaints about hard times; but it seems hard to get out of the old groove. I wish you every success, and hope to hear through your columns from some good farmer from this part of the country who is acquainted with our needs, for what often suits Ontario will not do here.

A. M. M., Lewisville, Moncton, N. B.

SIR,—I and some of my neighbors have given orders for Russian Mulberry trees, and if they do only half as well as the agent claims I shall be well satisfied. He stated that in Manitoba trees planted eight years ago have reached a height of forty feet, with a diameter of eight inches, and will come into bearing in two years with full crops afterwards. Are these statements true? Do you know of them being grown in Ontario? What kind of soil and cultivation do they require.

J. B., Winfield, P. O.

[Agents generally exaggerate to enable them to dispose of their wares. The Russian Mulberry thrives well on nearly all kinds of soil and requires very little cultivation; of course the more liberally they are treated the better they will grow. Some

of the trees planted by the Mennonites in the North-west, in 1875, are now (1883) upwards of 25 feet in height and eight inches in diameter; it is a valuable tree for timber and the fruit is delicious. Read letter from T. G. S. in this issue.]

SIR,—Being desirous of farming for myself in the Province of New Brunswick, I should feel grateful could you let me know where I could obtain a Government grant of land (if anywhere) which could be profitably cultivated. Also if you think I should be at any great disadvantage by waiting a year.

AN APPRECIATIVE READER,
Sussex, N. B.

[Free grants of land to actual settlers are made in 10 of the 15 counties into which New Brunswick is divided. The Government issues a pamphlet, which may be obtained from the Minister of Agriculture, at Fredericton, N. B., giving all the necessary information. We would advise our correspondent, after obtaining a pamphlet, to pay a visit to one of the best settlements described therein, and judge for himself of the capabilities of the locality. We cannot see what advantage would be gained by waiting a year. We would be glad to hear from any of our readers who would give their experience of these lands.]

SIR,—I have been trying several new kinds of potatoes this year, and thought you would like to know the results. It has been a very poor year for any crop here, as the land is very low and flat.

I got a peck each of Susy and Mammoth Pearl, and one pound of Wall's Orange. The Susy yielded 12 bushels of beautiful potatoes. The Mammoth Pearl did not do so well as the Susy, yielding about 7 bushels, and not such nice looking potatoes. The Wall's Orange did better than either, 1 pound yielding 85 pounds of the prettiest potatoes I ever saw. All the kinds are good eating potatoes. They were planted in the same kind of ground as the Early Rose and Beauty of Hebron, and turned out twice as well.

J. L., Coldwater, Ont.

We like your paper very much. It is one of the best papers printed for agriculture.

J. C., Carleton, P. E. I.

SIR,—Among the officers of the Dairymen's Association of Western Ontario, for 1882-83, the name of C. E. Chadwick, Ingersoll, Ont., appears as Secretary, and J. C. Hegler, of same place, as Treasurer, yet these names do not appear in the published list of members. How is this?

B. L., London, Ont.

[A large amount of correspondence is unavoidably crowded out of this issue, and will appear in our next.]

William McCombie of Tillyfour.

While in Scotland last summer, Mr. J. H. Sanders, of the *Breeders' Gazette*, in company with Mr. George Wilken, Waterside of Forbes, made a pilgrimage to that Mecca of Aberdeen-Angus breeders, Tillyfour, the home of the late Mr. William McCombie, a name more inseparably linked with the fame of the Polled cattle of Scotland than is that of the Collings with Short-horns, or of Tompkins with the white faces of Herefordshire. The glory of Tillyfour, alas! has departed; and the stables and pastures that once were the home of the most renowned specimens of the Aberdeen-Angus breed, from whence they went forth to Paris, to Smithfield, to the Royal, and to the Highland Society Show, conquering and to conquer, can no longer boast a collection of the hornless blacks that attracts attention. The memories that cluster around Tillyfour, however, will long give the place a charm to all lovers of the hornless blacks. As we stood on the hillside in front of the grove that surrounds the old "steading," on the very spot where, years ago, McCombie paraded several hundreds of his choicest animals for the inspection of the Queen, who had driven over from Balmoral

of Scotland; and young Mr. McCombie, before he had completed his "teens," also devoted himself to trading in cattle. About 1829 he became tenant of the farm of Tillyfour, and immediately after he gave up dealing in lean stock, and commenced the formation of a Polled herd. It would seem that his father, who, of course, had exceptional opportunities of knowing the value of the breed as compared with others, had held the native Polled cattle in high favor. Mr. Wm. McCombie, in replying to the toast of his health at a banquet at which he was entertained in Aberdeen in 1862, said: "I was led by a father, whose memory I revere, to believe that our Polled cattle were peculiarly suited to our soil and climate, and that, if their properties were rightly brought out, they would equal, if not surpass, any other breed as to weight, symmetry and quality of flesh. I resolved that I would endeavor to improve our native breed." The Tillyfour herd dates from 1830, and was finally dispersed in 1880, a few months after the death of its worthy owner. He started his herd with cattle bred in the county, some on Tillyfour itself, and some by the Messrs. Williamson, St. John's Wells, Fyvie; Mr. Walker, Wester Fintray, and others. With these old local strains

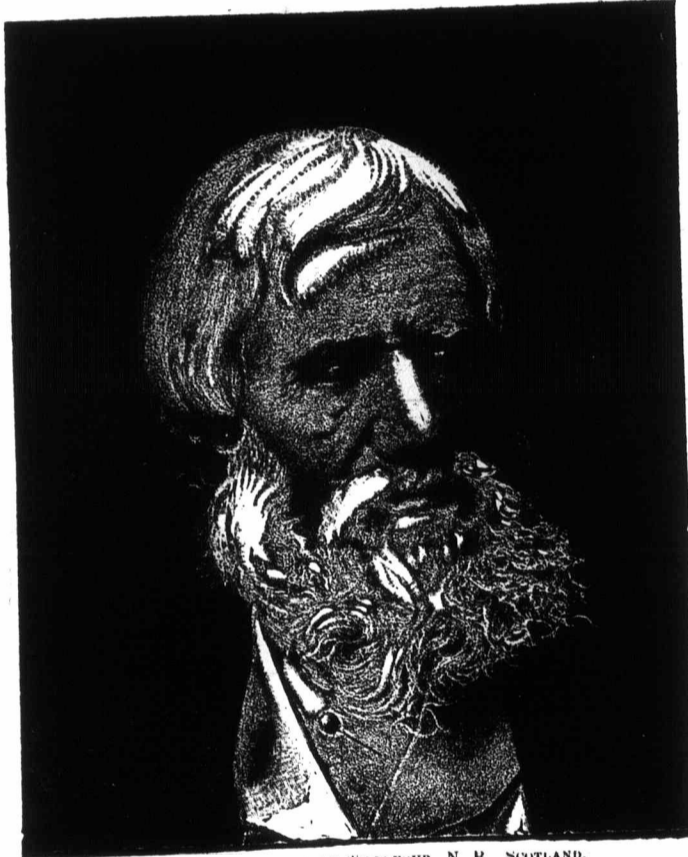
he worked for some years, produced many excellent animals, and gaining numerous prizes. At Mr. Wm. Fullerton's sale at Ardvie, in 1884, he purchased Queen Mother 348, as a yearling heifer, for £12 10s., and from her he built up his celebrated Queen tribe, which has probably done more than any other to spread and enhance the good name of the breed. Mr. McCombie pursued close breeding to a considerable extent, and with much ingenuity blended the material which ultimately produced such excellent results as the progress of his herd displayed.

Mr. McCombie's success in the show-yard has few parallels in the history of farm-stock. In the third edition of his volume entitled "Cattle and Cattle-Breeders," no fewer than seventy pages are occupied by a mere record of the premiums won by animals belonging to the herd prior to 1875. Not content with a large share of Scotch and English honors, he several times entered international contests in France, and on all occasions returned with new laurels and fresh fame for his favorite blacks. Probably the crowning victory of his life was achieved at Paris in 1878. On that occasion, in addition to several leading "class" honors, he carried off, with a group of beautiful young polled cattle, all bred at Tillyfour, not only the £100 prize for the best group of cattle bred by the exhibitor in the Division foreign to France, but also the £100 prize "for the best group of beef-producing animals bred by the exhibitor." In fat stock as well as breeding shows, Mr. McCombie often proved invincible; and altogether,

it may safely enough be said that the high reputation which the breed has deservedly gained beyond the bounds of the British Empire has, to a very large extent, been fostered by the remarkable show-yard achievements of the Tillyfour herd.

A MODEL VETERINARY SCHOOL.—The Berlin, Prussia, Veterinary School was attended last winter by 247 matriculated students, the largest attendance during the century of its existence. The main building with its three lecture halls, its large, well-stocked library, and numerous lodgings for officials, etc., contains also an extensive anatomical department, with very valuable collections. The pathologico-physiological institute connected with the establishment is situated in one of the new wings. The dog hospital, the horse hospital, the operating rooms, riding school, smithy, etc., are considered the best of their kind. In the cow stables are to be found the favorite races of all countries partly for purposes of instruction, partly for the uses of the dairy. The horse hospital can accommodate 100 sick horses; in it there were treated, in 1882, no fewer than 2,241 animals; 600 were examined and dismissed, 7,085 sent to the polyclinic. In the stationary dog hospital, 1,200 patients were treated; in the polyclinic, 3,215.

Select some of the largest and finest walnuts and hickory nuts for planting.



MR. W. M. MCCOMBIE, OF TILLYFOUR, N. B., SCOTLAND.

on purpose to look at the animals that had brought such honors to a Scotch breeder, we could almost fancy that we saw the grand collection, and that we could hear the proud old man as he presented his famous old cow Charlotte to the Queen! When this cow, the champion at Paris, was led in front of the august group, instead of pointing her out to the Queen he reversed the order, and presented the Queen, to the cow, saying, "Charlotte, this is Her Majesty the Queen;" his favorite cattle being always before and above everything else in his mind. Her Majesty laughed heartily at this *faux pas*, and the grand review continued. It is said that the Queen at one time seriously contemplated conferring the honor of Knighthood upon Mr. McCombie, but his personal appearance, which was repulsive and untidy, was strongly against him, and the honor was never conferred. The people of Aberdeenshire, however, appreciated the sterling good sense and mature judgment of the veteran breeder, and he enjoyed the proud distinction of being the first tenant farmer that ever took a seat in the British Parliament.

The following sketch of Mr. McCombie is condensed from Macdonald and Sinclair's "Polled Cattle":—

Mr. McCombie was born in Tillyfour in 1805, and died in the spring of 1880. His father, who owned the small estate of Tillyfour, was for many years one of the leading cattle-dealers in the north

Sorghum Sugar Making.

We take from the *Indiana Farmer* the following interesting account of a visit to the celebrated Sugar Works at Champaign, Illinois:—The works are located just outside the city limits. Outside the building, which is a three-story frame and entirely too small for the amount of work required of it, was a busy scene. Wagons were coming, standing awaiting their turn, unloading or driving out of the yard. Two at least were constantly alongside the carrier, or endless apron, unloading the juicy cane. The carrier, by slow but steady motion, carries its load forward and up towards the first set of crushing rollers. By the pressure of these some 75 or 80 per cent. of the juice is forced out and carried through a large spout into an immense tank below. A little further on the cane is passed through another set of rollers, after being saturated with hot water, and some 10 or 15 per cent. more of superior juice is pressed out. The bagasse is now somewhat dry, but far from a fit condition for burning, as it seemed to us; yet it is carried on up over the openings to the furnaces and dumped in in great masses of half a cord or more, and by means of a powerful blast of hot air brought through holes underneath the furnace, is consumed as readily as dry shavings, and at a saving in fuel of \$50 or more per day. Only one-third the amount of coal is required for running the furnaces that would be necessary if the bagasse were not consumed in this way.

From the tanks below the crushers the juice is pumped into two immense tanks of 1,580 gallons each on the roof of the building, 45 feet above. Here it is treated to a certain proportion of carbonate of lime. It is then drawn off into five de-fecating tanks on the third floor. These tanks hold 500 to 600 gallons each. After remaining here for a few hours, subjected to heat, the scum is removed and the juice is drawn off into two copper evaporating pans of 560 gallons each, which are provided with large coils of pipe, into which steam is admitted. Here a furious boiling takes place for some 30 minutes, in which time the juice is reduced to a condition called semi-syrup, being a density of some 20 per cent. greater than water, or 20° Baume. In the process 14 gallons of water are thrown off every minute. The syrup is now run into a number of settling tanks, and from thence into a number of tall, upright iron cylinders, called filters, in the bottoms of which a quantity of bone charcoal has been placed. This is the first filtering process. The filtered syrup is discharged into tanks in the basement, and is then pumped up into a larger and taller filter than the others, extending through part of two stories, and containing 1,200 gallons. The bone coal used in filtering is reheated and used over and over again. The juice is now forced into a large supply tank connected with the vacuum pan. Here is where the important and careful manipulation is done. The vacuum pan is an immense and costly affair. It has a capacity of 1,500 gallons, but only 1,200 gallons of syrup are usually admitted at a time. Here it is boiled at a temperature of about 160° for from four to five hours, under the personal inspection of Professor Webber, who frequently draws off and examines a sample of it in a glass test tube, to know when to pass on the "strike," as it is called, to the movable pans, in which it is left for a time to settle. It is now in a mushy condition, and before going through the centrifugal mills, is passed through an odd-looking, many-toothed affair, somewhat like a threshing machine, and called the mixer. Here it is torn to pieces and drops into the centrifugals, hollow wheels some three feet in diameter, with broad rims pierced with numerous fine holes, and enclosed in iron cases. With a speed of 1,200 revolutions a minute the uncrystallized portion of the mixture is sent through the holes in the rim of the wheels and passes down into tanks below in the form of syrup, while the sugar passes into other receptacles. The ordinary work done by centrifugals is 120 pounds of sugar each hour. Much of the cane has been touched by frost, and thus damaged for making sugars, and much of that that was not injured by frost is quite green, so that a smaller proportion than usual is susceptible of crystallization, and some of it requires to be run through the vacuum pan and the centrifugals a second time. We brought away a sample of a lot that had been thus treated that was very fine in appearance and of superior flavor, equal in strength and quality to Orleans sugar of the same grade. The cane, or raw, corn-like taste was entirely removed, and the sugar sells readily at 9c. for brown and 10c. for light granulated in retail grocery stores.

The works are now using about 150 tons of cane per day, and making 1,500 gallons of syrup or its equivalent in sugar. The company is using the product of six hundred acres, two hundred and fifteen acres of which were under their own cultivation, and the remainder belonging to farmers in that vicinity. The average yield of cane the present season is about 9 tons per acre. Under favorable conditions of weather and cultivation it should reach 15 tons. The company pays \$2.50 per ton for cane unstripped, and \$3 per ton for stripped and topped, delivered at the works. The cultivation after the first few weeks is no more difficult than for corn, and with a good yield the profit is much better than on any of the ordinary farm crops. It is safe to predict that a much larger area of cane will be put out next year, and that sorghum sugar works will be multiplied. This company has works also at Hoopston, Ill., and at Sterling and Hutchinson, Kan., and they propose to put up machinery next year at several other points where sorghum is extensively grown, for the purpose of reducing the juice to what is called the semi-syrup condition. In this condition it can be sent to one of the works already established and run through the vacuum pan and the centrifugals at any time, and thus keep this expensive machinery at work through a large portion of the year. The present season it will have nothing to do after November.

An outsider can only guess at the profits made by the company, but it is evident that they are entirely satisfactory. A reporter of a Chicago paper who was present figures the profit from an acre of cane at \$51.75. At this rate their 600 acres at Champaign would net the company the handsome sum of \$31,050.

OUR NORTHWEST.

THE EXPERIMENTAL FARMS TO BE ESTABLISHED BY THE C. P. R. WEST OF MOOSE JAW.

A special train made up of fourteen cars and a locomotive went through Regina recently, bound for Moose Jaw. It contained teams, men, and outfit for the establishment of experimental farms along the line of the C. P. R. west of Moose Jaw. So much having been said adverse to the land west of Moose Jaw, the company conceived the idea of establishing farms to test the land thoroughly. This was not on the ground that the directors had lost faith in their lands, as their hopes concerning it are still of the brightest; but their desire was to win others who think differently to their line of thought as while these adverse opinions were held it would be difficult to get farmers to try an experiment in which there was the least chance of failure.

The train was made up of four cars of mules and horses, four cars of fuel, two boarding and sleeping cars, one baggage car, Land Commissioner and assistant's car and caboose. The train was in charge of Land Commissioner McTavish, who was accompanied by Assistant Commissioner L. A. Hamilton and Inspectors Ducker and Struthers, the number of men being about forty. First ground will be broken west of Moose Jaw at the entrance to the co-teen. The system will be to stop at the farm selected, plow during the day, and move to the next farm during the night, arriving in time to repeat the operation of the day before. Farms will thus be started about forty miles apart between Moose Jaw and Calgary, and it is expected that on these the Company will have broken this fall about six hundred acres.

In the spring buildings will be put up and a farmer located on each farm sufficiently equipped with stock and machinery to break four hundred acres next season.

The experiment is one of the deepest importance to the North-West Territory, as it will effectually solve the vexed question as to the adaptability of the lands, through which the railway runs, for agricultural purposes.

Nibs.

A circular has been issued by the Minister of Education, laying out the course to be pursued in the Farmer's Examinations about to be established. The circular is long, and having already appeared in the leading weekly papers, we have not reproduced it. We hope these examinations will encourage the study of agriculture and keep our farmer's boys at home, where the opportunities to become happy, useful and well-to-do are without a rival. Why select the month of July, the busiest in the year, for the examinations?

During this month and the next the subscriptions for nearly all the periodicals in the country are sent in. Now is the time to introduce to your friends the subject of taking THE FARMER'S ADVOCATE. Send for specimen copies, our illustrated Premium List, and poster.

THE MINISTER OF AGRICULTURE.—We regret that the Hon. James Young has been compelled to retire from the office of Minister of Agriculture for Ontario. A most useful and conscientious career was expected from Mr. Young. We hope that his health will soon improve, and that Col. A. M. Ross, M. P. P. for Huron, may prove a most worthy successor. He has grand opportunities for good.

A N. Y. journal says we lately inserted a cut of theirs without credit. As we have not had a cut from them for years, how could we? We did refuse a year ago to insert a stereotyped puff of their paper.

Brown's Experimental Farm.

We notice by the American papers that Prof. W. Brown, of Guelph Ont., has issued another manifesto about stock feeding. Not having done us the honor of a copy, we await account of results from Dakota and other Western papers.

Being at the Walker House, Toronto, the other day, the Professor kindly furnished the *Globe* with the following:—

SEED EXPERIMENTS—FAVORABLE NOTICE OF THOSE CARRIED ON AT THE ONTARIO AGRICULTURAL COLLEGE.

The celebrated seed-growers, Oaksbott & Co., of Reading, England, having advised with Prof. Tanner, of the Institute of Agriculture, South Kensington, with reference to having some of their selected varieties experimented upon in Canada, Prof. Tanner wrote them as follows:—"I have to thank you for bringing under my notice the series of experiments you propose having carried out in different districts. Let me mention to you that at Guelph College they have facilities for carrying out and testing such experimental results in a manner surpassed by none, equalled by few, if any. I think you should put yourself in communication with Prof. Brown, for it is very probable that Guelph College can give such valuable help as will surprise many in the Old Country. Wishing you every success in this great international work."

Accordingly Prof. Brown has had important proposals from Oaksbott & Co., with regard to testing four varieties of wheat, two of barley, two of oats, and one of peas, which will be submitted to the Department.

The report of the extraordinary fatality among the lambs on this experimental farm was voluntarily furnished by residents thereon. We believe they spoke the truth—believe so still, the Prof. to the contrary notwithstanding.

The Clinton Stock Sale.

This year the thorough-bred stock sale was held on the 24th of October. There was a good supply of thorough-bred cattle offered, together with horses, sheep, pigs and poultry. The sale was honorably conducted, no spurious bidding was allowed, the vendor having the privilege of one bid. But little stock was sold, buyers feeling they were not as flush of cash as usual, and sellers are not yet fully realizing the fact that the deficiency in the wheat crop must check the circulation of cash to some extent. We asked Mr. Tuber, a noted stock importer there, how his crops were this year. He said he had sown 35 acres of fall wheat, but would have to buy his bread. This at once convinced us that this was the cause of the unusually dull sale. The wheat crop has been much worse than we anticipated in this locality, and we fear that it will materially interfere with the coming season's business. We would strongly recommend our subscribers to be unusually cautious this year against incurring any additional liabilities at the present time. Just wait a few months, and you will be able to use your cash to better advantage. Avoid debt and avoid signing any paper that may make you liable for any unknown sum. You have had good times for years; you may expect a little reverse sometimes.

A movement is on foot to establish the Western Fair on a basis more satisfactory to exhibitors and others, but, perhaps, not so satisfactory to some of the present office holders.

Farming for Boys.

BY THE AUTHOR OF TEN ACRES ENOUGH.

CHAPTER XVIII.—Concluded.

While waiting, in this way, for some prospect to present itself, a man of genteel appearance, and past middle age, presented himself among them. He had entered the gate and walked up to the house without being noticed.

The strange gentleman looked at Tony King attentively, then cast his eyes around the party, and then again turning to Tony, inquired,—

"But what may be your name, young man?"

"Tony King, sir," was the reply.

"Anthony King!" he exclaimed. "The Lord be praised for bringing me here!" And instantly he mounted into the carriage, seized Tony's hand, and embraced him with the warmest affection.

"You do not know me," he resumed. "You were only a child when you last saw your Uncle Alfred, but I am he, and after a long search I have at last discovered you. I have a great deal to say to you. Come out, Tony, and let us become better acquainted with each other."

Here was the greatest surprise that could have happened to every one who witnessed it. True enough, Tony, when a mere child, remembered having seen his Uncle Alfred. He knew also that he had disappeared from among his relatives, and gone no one knew whither. No tidings of him having been received, he was given up for dead. Tony, knowing so little of him, had altogether forgotten that such a relative existed.

But Alfred King had mingled with his fellow-men all over the world, and, being able to make himself at home wherever he might happen to be, soon brought his new acquaintances to an understanding of his character and intentions. Leaving home poor and friendless, he had fought out for himself, in a remote section of the country, the great battle of life, and had now returned to his native place, not overburdened with riches, but with moderate fortune,—not enough for many of us, but sufficient for him. The disposition to be satisfied with what he had acquired, in reality made him rich,—for riches come of a contented mind, not of an overflowing purse.

He had now returned to settle somewhere near the spot where he was born. He had been searching for his relatives, but, in an absence of many years, all but Tony had been swept away by death. Him he sought long and anxiously, and by the merest accident learned of his being with the Spanglers.

A genial intimacy soon sprung up between Mr. King and Uncle Benny. The latter gave him a connected history of his nephew, how well he had behaved himself, how worthy he was of his love and protection, and how ardently he desired to strike out for himself as the owner of a farm. It was natural that Mr. King should concentrate upon his only surviving relative his whole affections. He had enough of this world's goods for both of them, and he avowed to Uncle Benny his intention of establishing for himself and Tony such a home as the deserving boy was longing after.

Now, it had always been insisted on by Uncle Benny, in his arguments with Spangler, that the latter was farming too much land; and that he would thrive better, make more money, and have less work to do, if he would sell one half. Some men might drive a hundred acres to great advantage, but Spangler was not one of them. Organized as he was, he could do better with a half than with the whole. Spangler had uniformly resisted this doctrine. But latterly, however, the truth as proclaimed by Uncle Benny had been slowly working its way into his mind. He did not resist so stubbornly as at first. True, no one had ever offered to buy any portion of the farm, hence he had never been tried by the test of opportunity.

But the temptation to divide his hundred acres was now to be held out to him. Tony King's ambition extended only to thirty acres. He explained to his uncle what he intended to do with such a tract. He had made a rude sketch on paper of his plans. There was to be a great peach-orchard, a pear-orchard, and twenty acres were to be stocked with berries, leaving room for all vegetables for domestic use, and pasture for a cow.

There were thirty acres at one end of Spangler's farm which would exactly suit him. They embraced the famous brier-patch, from which so many hundred dollars had been annually realized; besides, it would produce them an immediate income. If his uncle would only buy this thirty-acre lot, and put up a small house, he would work the

farm to his entire satisfaction. When urging the matter on his attention, the boy's enthusiasm became unbounded. He grew eloquent as he counted up the profit from his fruits, and finally infused into his uncle's mind some portion of his own sanguine fervor.

The contemplated purchase was of course no secret in Spangler's family. Under Uncle Benny's urgency, Spangler at last consented to sell; but though satisfied it was probably best for him, he gave up to it with stubborn reluctance,—it was hard to part with his land. Then it went hardest of all to give up the great brier-patch. The "old field," which, in the face of Spangler's ridicule and prophecies of failure, Uncle Benny had converted into a gold mine, he now prized as the most valuable part of his farm. But Tony refused to buy unless he could secure the brier-patch. This controversy was finally adjusted by Mr. King consenting to give three prices for what was once known as the "old field."

"Now," said Uncle Benny to Spangler, when the bargain had been concluded, "take this money and pay off your mortgage. When you laughed at me for undertaking the 'old field,' didn't I tell you it could be made to pay your mortgage, and has it not turned out even better than I said?"

What reply could Spangler make to so searching a question? He did manage to smile, but said nothing.

No happier young farmer lives than Tony King. His thirty acres are all that he covets, and all that he now thinks he shall ever want. Setting out with moderate views, the hope is that moderation will continue to be his rule. His farm is fast becoming a pattern for his neighbors to imitate. But it was no light task to clear up and make good the long neglect of his predecessor. As all reformers, whether of land or of something else, have difficulties to overcome, so had Tony a full share; but then one half of them would never occur again. It is only the beginners who really have the hard work. His smaller fruits were planted even before the dwelling-house had been put up. Then followed his peach, and pear, and apple, and cherry trees. One crop of strawberries has already been marketed, and whoever drives by his peach-orchard about the last of any April, will discover it to be a wilderness of blossoms.

There are folks in this world who do not know what is a good thing, even when they see it. Tony was not one of these. He had seen, and tried, and proved the Chester County Whites, and knew them to be the best breed of swine that could be had. Hence he obtained from the Spanglers a very respectable number to begin with, and bought others elsewhere, so as to secure a proper mixture. Though his pens are far more capacious and stylish than the Spanglers', yet the latter feel no envy, nor do they look upon Tony as a rival; but these three young farmers continue in constant and intimate intercourse with each other. The Spanglers are never too weary to walk over of an evening to see Tony, and hear him tell of what he is doing, and what he intends to do next. His uncle is so indulgent that Tony is able to branch out in a way that far surpasses all the Spanglers could afford. But being principally in little things, the cost is moderate, while the comfort and gratification are very great. Bill Spangler was so struck with two or three little notions which Tony crowded on his attention, that he once declared he didn't know whether it was not better for a boy to have only an uncle instead of a father.

Tony longs for nothing of the great city beyond its daily newspaper. He sighs after no brown-stone mansion, no city luxuries, no city fortune; and, coveting none of these, he is happily beyond the reach of those countless vicissitudes which make city life so wearing to the heart; of the temptations which are so prone to overcome the moral susceptibilities, and of those ups and downs of fortune from which no foresight seems able to protect the most acute observer. Thus, if not likely to become suddenly rich, he runs no hazard of becoming poor.

Uncle Benny's mission has been accomplished. As years accumulate upon him, his joints stiffen, and his activity diminishes. But even though thus disabled in body, he continues to be unto the boys their "guide, philosopher, and friend."

How vast a field there is among us for farming by the *Men*! But an equally extensive one exists for farming by the *Boys*. If it be generously and kindly thrown open to them, thousands will gladly enter, and will grow up better and happier men than if reared in the hot-bed of a great city.

THE END.

The Household.

The Throat, its Trials and Troubles.

Nearly all medical men, in this country at least, are agreed that the terrible sufferings to which the would-be American martyr, Dr. Tanner, lately subjected himself have resulted in the elucidation of no new scientific facts. Nevertheless the great endurance of the man, and the extent to which insulted nature bore the trial, must have caused many thousands of people to ask themselves the question: "Do not most of us use more food and drink than are necessary to maintain our bodies in a state of health?" This question is one that can only be answered in the affirmative, for, as a general rule, people will call into requisition their powers of deglutition far too often during the twenty-four hours.

There is no nation whose sons are more healthy and hardy than one where abstemiousness is considered a virtue. Oatmeal is by many considered far from a dainty dish, yet the Scots, who live on little else, show well on it. The Arabs, who will live for days on a handful of dates, are sinewy, powerful, and hard as steel. And depend upon it, what is true in the aggregate is true as regards the individual.

My voice is but a feeble one to be lifted up against what I call the vice of over-indulgence in the dainties and delicacies of the table; but just let me beg the reader to call to mind the admission of many of the most eminent men of my profession, that over-eating brings about just as many of the illnesses and sufferings of humanity as does over-drinking, and among them may be mentioned gout, rheumatism and rheumatic gout, liver complaints and kidney ailments, indigestion, which may lead to any disease, and brain enfeeblement, caused by non-refreshing sleep. Much evil is brought about by an over-refined cookery. The plainer the food we swallow the better, and the cruet-stand is often the curse of the table. A pretty ornament it looks, I grant you, glittering with cut crystal and silver, but its tempting sauces and finely-flavored peppers may generally be looked upon as so much poison. A craving for condiments or hot stimulating dishes is a sure sign of debility of the digestive organs, which is one of the earliest forerunners of rapidly-advancing and probably premature old-age.

People must eat to live, I admit; but I want to combat the idea, that the more one can eat and the stronger the food partaken of, the healthier and heartier will the eater become. This belief does harm enough during health, but it becomes a still more dangerous and often deadly one during many cases of temporary illness. Think you it can do good to stuff down a patient's throat, at all hours of the day, messes of dainties to tempt the appetite, when the stomach is evidently out of sorts and needing rest? Often and often a patient's chance of recovery would be greatly increased were the beef-tea basin pitched out of the window, and the port-wine bottle sent after to keep it company. A lesson might be learned from the following story of "Topsy." Topsy was lap-dog to a lady of high degree; but lo! and behold, long ere the poor animal had passed half the brief span of years allotted to the canine race, Topsy was a pitiful sight to see. Obese to a degree, it could take little save carriage exercise, its appetite was lost, the daintiest foods were refused, it screamed in its sleep, its happiness and joy of life were clean gone, and gone too was its good temper. Medical assistance was called in, and the dog was sent to hospital at the house of a well-known skilled veterinary surgeon—since dead. In one week Topsy was well. And what do you think cured her? Only a little judicious starving.

The first signs of coming dyspepsia from errors of the table, are those of a heated and partially dry condition of the mucous membrane, that delicate internal skin that lines all the air-passages and the digestive canal throughout its whole course. The tongue may be furred in the morning, one feels languid, not well-slept, and lacks appetite, while there may also be heat and dryness of the nasal mucous membrane, and perhaps constipation. For such a case I would simply prescribe a little judicious starving. The stomach needs a rest. Good pure water, either plain, aerated, or iced, taken little but often, will save one from the pangs of hunger, or at all events from the inconvenience of it. The liver will then have time to get quit of its bile, and both it and the stomach will be restored to tone. The blood will have

time to get clear of its poisonous properties, whether acid or bile, and a newness of life and general freshness will be the happy result.

Many people lack the moral courage to go in for a day now and again of extreme abstemiousness. Such people, then, would do well to get away to sea for twelve hours or more: if they suffer from the motion all the better, they will not think of eating much.

Could the throat keep day by day a list of the various articles of diet and drink which pass it, their quantity, quality, and times of passing, and present it to its owner at the end of the week, many of us, I trow, would have no cause to wonder that we sometimes feel somewhat "out of sorts."

But I must now say a word about the throat in other senses of the word, as it comprises not only the gullet, but the uvula and tonsils, as well as the organ of voice, and it is intimately connected, as will presently be seen, with the internal ear.

Children that have been exposed to wet, damp, or cold winds are very subject to sore throats. There is usually much pain, swelling, and difficulty of swallowing. The disease, like most children's ailments, requires prompt treatment, the object being to prevent suppuration. You must keep the child in-doors, if not in bed, and give a cooling aperient. Children are frequently very persistent in their refusal to take medicine of any kind, and it is always better to coax than to force them.

Indian senna tea, with a little Epsom or Rochelle salts in it, makes a nice easily-administered laxative. About a quarter of an ounce, or rather less, of the senna-leaves is infused in a wine-glassful of boiling water for half an hour, a pinch or two of salts added, the clear liquor is poured off, and coffee may then be added to help disguise the flavor. It should be served up from a small coffee or tea-pot, and sugar and milk added, when it will seldom be refused. Cool soothing drinks should be given, and about twenty drops of the wine of ipecacuanha every four hours. Hartshorn liniment should be used on the neck and a strip of flannel worn. If this simple treatment should fail to remove the disease, it will be advisable to call in a physician.

The swelling may go away, and the pain externally, and the tonsils remain hard and big. In this case give the child from a tea-spoonful to a dessert-spoonful of cod-liver oil three times a day, and apply iodine liniment once a day externally. Just one hint here to mothers: the value of fresh air and exercise to young children who are unable to walk far cannot easily be over-rated, and the so-called perambulator is a blessing to thousands; but the danger of a child catching cold therein is very great indeed. See, then, that your infants are well wrapped up before they are sent out, and especially that their hands and feet be snug, and you will be well rewarded by having fewer medicines to use in the nursery.

Some people are very subject to elongation of the uvula, that little tongue-like thing that you see hanging down in the centre of the back part of the throat. Although not a dangerous, it is a troublesome complaint, from the disagreeable tickling cough to which it gives rise, with sometimes an inclination to retch. There is usually relaxation of the throat along with it, and often the whole system wants bracing up. At the same time, therefore, that astringent gargles—say alum or chlorate of potash—are used, tonics should be taken; the best are those composed of iron, or iron and quinine, in some bitter infusion.

When the tonsils are ulcerated strong applications may be required, probably the solution of nitrate of silver, or solid caustic itself, and in these cases—and indeed I might say in nearly all cases of sore throat—great relief is obtained by inhaling the vapor of either plain or medicated hot water. The inhaler is a very simple contrivance, and can be bought for a few shillings. No family, in my opinion, should be without one in this uncertain climate.

It is often a sad affliction when public speakers, actors, clergymen, and others are suddenly attacked with sore throat. To such as these the inhaler would indeed be a boon, as the trouble might be checked in the bud by its use. Hoarseness of voice is a disagreeable ailment for either speaker or singer to have. Those that are subject to it should never permit the state of their health to sink below par. Plenty of exercise in the open air is essential, good food, and the use of tonics, ferruginous or otherwise, according to the state of the blood.

In hoarseness after long speaking, I would sug-

gest the following treatment:—Keep quiet, to give rest to the organ of voice; well reddened the lower part of the front of the neck with hartshorn and oil liniment; take an aperient pill or two before retiring, and place the feet and legs in a mustard bath, about three ounces of mustard to a pail of hot water. People who speak or sing much in public should well exercise the vocal organs by daily singing or reading aloud in private. I dare say every great singer who ever lived has had her or his own way of clearing the voice, and keeping it clear during a long performance. Everything that can be chewed or swallowed has been tried, from a beef-steak to a bit of borax. The beef-steak would do good by strengthening the body, the borax lozenge sucked and the juice swallowed would act beneficially by removing or preventing relaxation of the throat and glottis.

Inflammation of the tonsils often becomes chronic, or enlargement continues after inflammation has ceased, or the organs become hard and hypertrophied without any inflammation, and this state is a frequent cause of deafness. The rationale of this is that the tumours have a tendency to grow upwards and encroach upon the mouth of the eustachian tube. This tube it is that communicates with the drum of the ear and supplies it with air. It can easily be understood, then, that if it is not patent, if it is occluded in any way, either by slight inflammation, as during a cold, or by being pressed upon by a tumor, deafness may be the result. I do not mean to go into the subject of deafness in this paper, further than to say that the kind of enlarged tonsil which produces deafness is not usually visible to the sufferer himself, who may examine his throat at a looking-glass, nor even to the surgeon who merely trusts to inspection by eye alone, and not by finger. This fact ought, I think, to lead many, who have the misfortune to be deaf, instead of settling quietly down to the burden of so great an affliction, to visit some eminent aurist for examination, and mayhap for an operation which will bring relief.

Family Circle.

A Brave Deed.

BY THE AUTHOR OF "A LOST KEY," ETC., ETC.

I.

ADA CARFIT was decidedly the belle of Sharborough; and as that small but bustling Midland town had a reputation amongst its neighbours for lovely lasses, the distinction was a great one. In figure, the girl was somewhat small and slight; but in feature she had attained almost to perfection, both of outline and of tint. She had a lofty, well-proportioned brow, around which rippled rich waves of auburn hair. She had eyes of dreamy blue, cheeks just sufficiently tinged with delicate carmine to throw into relief the pearly whiteness of her teeth. The worst of it was, she knew that she was beautiful, and the knowledge spoiled her.

Ada was the only child of a wealthy Sharborough manufacturer, and added to her other charms that of being a very considerable heiress. Naturally she had of suitors not a few. But Ladies Carr, Vere de Vere can exist in much lower circles than that of the poet's faulty heroine, and Ada Carfit had caught the vice of a proud coquette. She relished her power over susceptible hearts, and did her best to extend it. The breath of homage was as life to her. She led her wooers gently on till the coils were all about them, and then, of a sudden, they found an impassable barrier erected, and Ada's smiles were for newer comers. It was an amusement, half the zest of being, to her; she never wasted an anxious thought on what it might mean to her victims. Men were strong, and must protect themselves.

The last to enter the charmed circle had been a youth from the North, who in appearance and manners was certainly at a disadvantage with those whom he quickly came to consider his rivals.

Roger Herlestone was two-and-twenty; but his thick-set, burly figure, and his abundance of beard, made him look years older. He was heavy in feature, uncertain in movement, and awkward in address. As the nephew of Mr. Marston, of Marston and Marsh, cotton mill owners, his prospects were very good. But the knowledge of this fact somehow failed to give him the needed self-confidence.

Roger's many blunders made him to a large extent the butt of his male acquaintance, and it was probably this that caused Ada Carfit, out of sheer opposition, to treat him with marked favour. Philip Dare, the lawyer, had likened Roger to the proverbial "bull in a china shop," and Philip Dare should be made to bite his lip with vexation at her deference to the despised one. But once again she was kind only to be cruel.

"I cannot tell whether she cares for me, or whether she does not," said Roger Herlestone to his younger brother, Martin. "Sometimes I think one thing, and sometimes another. But this I am sure of, she is all the world to me."

"Then I'd ask her, old fellow."

"But—but—she has always so many round her. Ada Carfit is the queen of a large circle, and I—"

"Have been the best of sons, the best of brothers, and, I have no doubt, would make the best of husbands."

"And I," said Roger, resuming slowly, and paying no heed to this enthusiastic praise, "am a rough and homely man, who has almost as good a right to dream of becoming Prime Minister as of winning such a wife."

"Nonsense, Roger! Don't be so unnecessarily modest. You are as good as she, and the girl must know it."

"Then," and the elder's tone changed suddenly, "I'll put

it to the test and see. If Ada refuses me it will be just another dream dispelled, and I shall face the worst."

The opportunity soon came. The two were thrown much together at a summer picnic party, and some malign genius made Ada more than ever gracious. It seemed to her that she had at last succeeded in thawing the ice of her admirer's awkwardness, and the studied compliments he paid her awoke the gleam of a sunny, satisfied smile. She little suspected the commotion that was working beneath the surface. They had wandered out of sight and hearing of the rest, on pretence of examining some curiously-shaped rocks.

"How still the air is, under the sun!" said Ada, stopping at a low fence that crossed the hillside. For a moment her companion did not answer, and she cast a casual glance upwards at his face. What Ada saw there made her start and slightly shiver.

"Yes," he said, with a hoarse and mighty effort, "this is just the turn of the seasons, and this hush is frequent and very suggestive then. You and I have come to a turning-point too, Miss Carfit; and I must break the stillness by a very important question. Can you not guess what that is—the story I have to tell, Miss Carfit—Ada?"

"No, no. We had better return, I think. We shall be lost, Mr. Herlestone."

Ada was keeping her composure wonderfully, and she hoped that by this coldly-spoken hint the confession she feared might be averted. She did not know the speaker.

"Wait an instant, Ada," Roger cried, abandoning the last shelter of reserve, "I have this to tell, that you are more to me than any one else in the wide world can ever be. I love you, Ada—surely you must have divined it! Can you love me back again, however little? Will you some day be my wife?"

His words were coming swiftly enough now, and his beseeching eyes, gleaming within their shaggy recesses, emphasised their truth. The man was transformed, and a faint response of admiration was raised in the girl's heart. But he was—could be—no more to her than others she had rejected. This triumph she was used to and gloried in; though usually she had been better on her guard, and had stopped the deluded one before this stage was reached.

"I am sorry, Mr. Herlestone, you have said such things," she replied. "I thought you were above romance. That is partly why I trusted you. You seemed so—so sensible."

"Must surely be a sign of that to admire and to love—"

"Pray don't, Mr. Herlestone. It is all a mistake, I assure you."

"A mistake that you can ever care for me?"

"Yes, certainly."

There was a levity about the assurance that stung the young man well-nigh into madness. He had heard rumors of the girl's heartlessness, and had paid no heed, treating them as idle scandal born of envy. Now he could believe. The very reality of his own love revealed the hollowness of this maiden's smiles.

"Is it also an error that you encouraged me to think differently?" he asked; "that you accepted my advances?"

"It was your own fault; you did as you pleased. But you are forgetting yourself now, Mr. Herlestone."

"I admit it, and I apologize, Miss Carfit," he replied bitterly. "It was truly my own fault that I did not understand. I do now. You will let me see you back to our party?"

The return walk was whiled away by a very constrained conversation, and both were glad when it was over. A strange silence descended upon Ada Carfit for the rest of that afternoon. Even the mirth of other courtiers failed to do more than galvanise her into an outward semblance of interest and good-humour.

II.

It was many months later, and the storms of, perhaps, the wildest winter within living memory had descended upon these Northern Midlands. For day after day, and week after week, there was scarcely a break in the clouds or a pause in the gale. Wind and rain, wind and rain, was the dreary record; until the lakes were swollen, the streams impassable, and miles of low-lying pasture lands submerged.

Sharborough was the very brightest heavens its huge manufacturing chimneys hung a yellow blot; and now the funeral-like pall of fog and smoke lowered overhead in a perpetual frown. Ada Carfit grew sick of it, and betook herself on a visit to an uncle at Baysditch, five miles away. There it rained still, it is true, and seemed likely to rain. But Baysditch was in the open country, and behind it were the Porley Hills. The girl was better content, and could grumble there with a sense of less oppression.

Of Roger Herlestone, since her dismissal of him, she had seen very little. He was grown graver and more reticent, it appeared, than ever. And he had lately been taken in as junior partner by Marston and Marsh. That was all she knew. But somehow his face frequently haunted her. He had looked so resolute and manfully on those Porley Downs. She even sighed, despite his utmost efforts, was equally present with the young manufacturer.

"I think I despise and hate her as much as I once cared for her," he told his brother; "but forget her I can't."

"Fall in love with some one else," was Martin's sage recommendation. But Roger shook his head.

"Not yet," he said; "I have not sufficient confidence in the female goodness since then."

"That was the greatest evil the girl did me. She destroyed faith at a blow."

"Stormy afternoon, Roger," said his uncle, two days later. "Do you mind driving to North Fulton to see about those missing orders? It will be best for one of the firm to go, as it is such a delicate question."

"I am perfectly willing, sir. I am not afraid of the weather in the least."

"Better start at once."

"So I will. I shall be back, then, by nightfall."

North Fulton was over the hills, ten miles off. The young man was quickly under weigh. He had to pass through Baysditch, and he was aware of Ada Carfit's presence there.

But it was nothing to him whether she saw him or not. The state of the roads was a much more serious consideration. How high the waters were and still rising! Many houses in the valley were already isolated, and unless a speedy change took place—of which, alas! there was no symptom—the result must inevitably be grave disaster.

The wind lulled for an hour or two while Roger transacted his business. But it arose in redoubled fury as he commenced

his return journey. Darkness added to the difficulty and the danger of the route.

Turning sharply round a corner into Baysditch Valley, Roger was hailed by a terror-stricken voice behind him. He pulled hastily up.

"What's wrong?" he asked.
"Pant, pant, pant!" and then a white face with awed, dilated eyes, gazed upon him in the mist.
"Porley Dam be bursten!"

"No!—Sure?" Roger comprehended in an instant what that message meant, and his accents were as hoarse as the stranger's.

"Ay; certain. 'Tis tearing through t' embankment like a cataract. Gettin' bigger every minute, and noane can't stop it."

"Then Baysditch must be flooded?"
"Yes. I be goin' to warn t'."
"Jump up here." And Roger drove as if for his own life instead of other people's.

The alarm soon spread, and a scene of terror and confusion ensued which might have appalled the strongest. Water was swiftly rising in the single village street, and the mutter of the on-sweeping torrent grew louder every instant. Homeless, and sadly deficient in both food and clothing, dozens of families fled to the hillsides while there was yet time.

Where was Ada Carit lodging? Milton Villa, old Luke Carit's home, was some distance beyond the clustering village-roofs, and Roger experienced some delay in reaching it. The inmates, only three in number besides two maid-servants, were but just alarmed, and their retreat was cut off before even Roger was aware of it. Ada was as pale as death, but strangely calm and self-possessed. Roger remembered afterward how, at least once in that hour of awful peril, her eyes were fixed on his as if they would read his very soul. But it was a time for action and not sentiment.

From the edge of the lawn—now the bed of a roaring stream—the ground trended gently away to the uplands, and there the only hope lay. It was more than probable than the house would give way under the avalanche of water which had still to descend. "Porley Dam" was the current designation of the reservoir that supplied all Sharborough.

Roger Herlestone swam across with his horse and turned the animal loose. Then, estimating as best he could the distance and his own powers, he returned and briefly explained his plan. There was no boat within reach. Each member of the household must trust to him; and he would return for each. It was proposed that Ada should go first; but she refused, and time was too precious to be spent in haggling. Mrs. Carit and her husband and the maids were all saved thus; and, nearly exhausted, Roger went back for the obstinate girl who still lingered. "Whether I die or live, this shall be my revenge," he muttered to himself.

Ada was in his arms now, and the cross-current running heavily against him. It was a desperate struggle, and growing every instant more dangerous by reason of uprooted trees, and other wreckage, that came swiftly down the valley.

Would he succeed? How the spectators held their breath and trembled! At last, with a faint "Hurrah!" he made *terra firma* with his burden. But then he fainted, and for the first time the rescued household observed that he was wounded. A tree-trunk had struck him, and inflicted a ghastly wound on the head. But for the present all they could do was to grieve, and tend him as he lay. They were outcasts, like dozens of others.

That flood will be long remembered, and not least by Roger Herlestone and the girl he saved.

Brain-fever supervened, and Roger was ill for many weeks. Ada Carit was his chief nurse, and her character seemed entirely changed, so humble and assiduous was she.

There came a day when, with a new light in his eye, Roger looked up and whispered, "Ada!"

She averted her face. But he had caught the vision of a tear—one of thankfulness and joy. He took her unresisting hand. "I have a confession to make," he whispered. "It was in sheer revenge I saved you. Can you forgive me, Ada? And after all—care a—little?"

"Forgive! And I—let me tell too," she cried brokenly, "I loved you though I didn't know it, when you asked me first, Roger."

Minnie May's Department.

This month we offer to the ladies the handsome prize of a fine meteor alarm clock for the best recipes, mode of mixing, cooking, etc., for Xmas pudding and Xmas cake and mincemeat. Also, to the young ladies, we offer one of Lovejoy's Metallic Weather Houses for the best written article upon the subject "How to spend Christmas." Both communications to be in by the 25th November.

Answers to Enquirers.

TORSY.—It is not customary now to send bride-cake.

J. M. N.—Where is the Isle of France, spoken of in "Paul and Virginia?" **ANS.**—The Isle of France, or Mauritius, is an island of the Indian Ocean, east from the islands of Madagascar and Bourbon.

AN ANXIOUS OLD MAID.—If you are as old as you say, you ought to have too much sense to ask such silly questions, and answers to most of them have appeared frequently. Anxiety to get married will not be likely to help you in attaining your ambition.

NELLIE.—Golden brown is as fashionable a color this year as last, and you can make over the dress with a darker velvet or velveteen border, at the foot of skirt, and add a velvet vest, cuffs and col-

lar—and behold! your dress is a new one, and more becoming to your style of face and figure than it was when first arranged.

CONSTANT READER.—1. Please tell me what is the meaning of engagement. 2. How long should a gentleman go with a lady before being engaged? 3. How long should they be engaged before being married? **ANS.**—1. An engagement means a promise to perform. A marriage engagement means a promise between two young people that they will at some future time become man and wife. 2. This question is not nicely or properly put. You mean for how long should a young man pay his addresses to a lady before proposing to her. That is a question for individual judgment. As a rule a young man proposes as soon as he thinks he has made a sufficiently favorable impression on the lady to risk her answer. To propose before proving one's sincerity by devoted and respectful attention does not seem respectful to the lady, yet better too soon than too late, especially if there be other admirers in the field. 3. Just so long as may suit their personal convenience and circumstances.

SNOWDROP.—1. Would it be proper for a young lady to break her engagement with a man with whom she has kept company near three years, when she discovers later she loves another better, who also returns her love, when both have loved each other for years, but never found it out until the present time? 2. Is it proper for a young man to refrain from telling a lady he loves her, because he is not sure she will return his love?

ANS.—1. They must be a charmingly stupid pair, and so well matched that it would be a pity to part them. The idea of a girl who has been engaged for years suddenly discovering that she has been in love with some one else all the time is a little too absurd. Probably she will by and by find that there is still a third whom she has loved from infancy, and then what will she do? However, we would advise her to break her first engagement and let that poor fellow have an opportunity of getting a less fickle-minded wife. 2. Quite proper, if his love be not strong enough to cast out fear.

"To put his courage to the test,
And win or lose it all."

AN EXPECTANT BRIDE.—For a travelling dress you could select a blue cloth suit made with a velvet vest, cuffs, and collar, and a blue felt hat in "Henri Tro's" shape, and trimmed with blue ostrich plumes and bands of blue velvet, or with blue wings and a small blue and black bird on the front or nearer the right side, with velvet bands and a Rhine pebble buckle. Make your Ottoman brown silk over a velvet or velveteen skirt, i. e., a skirt of silesia or alpaca to match, faced up three eighths of a yard with velvet pleatings. Pleat the front with the silk, or put it on in folds, and make a full drapery of long sagging puffs at the back. Cut the basque with points in front and at the back, and edge with a band of velvet, or put in a velvet vest and pipe the edges with a large cord of velvet. Have velvet cuffs and collar, and small velvet buttons set three-quarters of an inch apart. Pearl colored satin trim med with ecru lace and velvet would be handsome for the bridal dress, with long veil of tulle, and sprays of myrtle or orange flowers for the hair and corsage. Wear very long wrinkled white gloves. Yes, there has always been a sentiment concerning the selection of colors for a bride's wardrobe, and "green," which means forsaken, is never worn. The old rhyme runs that

"Something old, and something new,
Something borrowed, and something blue,"

should be worn by every bride to promote her success in life. And brides frequently wear their mothers' wedding stockings, and carry a handkerchief belonging to a friend. Of course these are silly superstitions, and the wise ones do not believe in them. Rice and old slippers are thrown after the happy pair as they leave the bride's home.

Recipes.

MOLASSES POUND CAKE.—Six cups flour, three cups molasses, one of sugar, one of butter, one of cream, three eggs, one tablespoonful ginger, one tablespoonful cloves, one of soda.

A very nice, satisfying pudding can be made on baking-day by taking a lump of bread sponge and working into it an egg, a bit of butter, sugar and salt; and steaming it after it has got light. Break off with a spoon, and eat with pudding sauce.

FRENCH ROLLS.—Knead six pounds of sifted flour into a dough, with two quarts of milk, half-

a-pound of yeast, and two ounces of salt; when the whole is well worked together, cover and leave it to rise. In two hours time, or when light, form it into rolls and lay them on tins; set them in a warm place for an hour, and then put them in a very hot oven. Bake twenty minutes.

CHEAP SOUP.—Do not throw away the bones of turkey or chicken. Crack them and let them boil for two or three hours in a little water; put in also any nice bits of the fowl that are left, particularly the neck, which is never eaten. To this add any soup stock you have, and, with a little barley or sage, you will have a nourishing soup. Season with salt, pepper and any herbs you choose.

SAUCE FOR POULTRY.—With boiled poultry serve celery sauce. The celery is simmered until tender. Then make a sauce by putting a tablespoonful of butter into a saucepan, and when it bubbles up stir in slowly a tablespoonful of flour. When cooked season and add half a pint of stock and half a pint of boiling cream and the celery cut in small pieces. Let it boil up one minute. Serve hot. The sauce can be made without the cream and celery with a pint of boiling stock and the addition of two or three beaten yolks of eggs, a teaspoonful of lemon juice, pepper and salt.—[Exchange.]

FRENCH CREAM CANDY.—Making molasses candy is a time-honored household amusement, but peasant as it is too much of it falls upon the children, and they find it an agreeable variation to make French cream candy, which is composed of sugar and water mixed in the proportion of four cups of the former to one of the latter. Boil eight minutes in a bright tin pan without stirring, and as much longer as is necessary to cook it hard enough to roll into a ball. Then take from the fire, and beat with a spoon, adding vanilla or peach flavoring as it begins to cool. Chopped raisins, currants, bits of fig or citron or nut meats may be mixed with the cream.

Cure For Stammering.

Many years ago a famous professor came to our town, and announced that he could "cure the worst cases of stuttering in ten minutes without a surgical operation." A friend of mine was an inveterate stammerer, and I advised him to call upon the wonderful magician. He called, was convinced by the testimonials exhibited, struck up a bargain, paid the fifty dollars, and soon called at my office talking as straight as a railroad track.

I was astonished, and asked my friend by what miracle he had been so suddenly relieved of his life-long trouble. He informed me that he had made a solemn pledge not to reveal the process of cure.

I knew two other bad cases—ladies; and, calling upon them, reported what had come to pass.

They were soon at the professor's rooms, came away elated, raised the hundred dollars, paid the cash, and in half an hour were ready, had the question been popped, to say "Yes" without hesitation.

I was soon made acquainted with several other cures quite as remarkable, and resolved to turn on my sharpest wits and wait upon the magician.

He seemed an honest man, and in two days I had made up my mind to pay him a large fee and learn the strange art, with the privilege of using it to cure whomsoever I would. Those who had been cured by the professor were solemnly bound not to reveal the secret to any one, but my contract gave me the privilege of using the knowledge as I pleased. And now I propose to give my readers a simple art which has enabled me to make happy many unhappy stammerers. In my own hands it has often failed, but in three-fourths of the cases which I have treated, the cure has been complete.

The secret is this: the stammerer is made to mark the time in his speech, just as it is ordinarily done in singing. He is at first to beat on every syllable. He begins by reading one of David's Psalms, striking the finger on the knee at every word. You can beat time by striking the finger on the knee, or by simply hitting the thumb against the fore-finger or by moving the large toe in the boot.

I doubt if the worst case of stuttering can continue long if the victim will read an hour every day, with thorough practice of this art, observing the same in his conversation.

As thousands have paid fifty and a hundred dollars for this secret, I take great pleasure in publishing it to the world.—[Dr. D. Lewis.]

Useful Hints.

In choosing a black silk, ladies are often at a loss for some test which will secure them from being deceived in the quality. In such a difficulty pinch the goods "on the cross," and then pull it in the opposite direction. If the crease still shows reject that piece at once; but if it smooths out entirely, and the crease disappears, it is safe to purchase. The color should be a glossy blue-black, a tinge of green or dun being undesirable.

To wash nice lace, baste it closely on a piece of flannel, securing all the little loops and points. Let it soak for a little while in a suds of pearlina or fine soap with a few drops of ammonia, then squeeze it and wash it gently with the hands, and if not thoroughly clean, soak it again in fresh suds. Rinse in two or three waters, and when pretty dry press on the back of the flannel with a hot iron. By this process the lace will be fully restored and look like new.

If you mean to spend the evening out in company or at an entertainment, it is good policy to take a nap, or at least a thorough rest during the afternoon. Care like this, which seems to be but trifling, to preserve the health, really makes a great difference in the aggregate of one's life.

Keep a dish of Indian meal on the toilet stand near the soap, and rub the meal freely on the hands after soaping them for washing. It will surprise you, if you have not tried it to find how it will cleanse and soften the skin, and prevent chapping.

It is better not to put woolen carpet in the closets, for as they are dark and quiet moths and other vermin are more likely to collect there. Straw matting or oilcloth is much more easily kept in order. Even heavy brown wrapping paper is not a bad substitute for a carpet in closets but little used.

Make a pretty square bag of flannel leaving one end partly open. In this put all the remnants of soap as the pieces become too small to handle easily. When the bag is filled, baste up the opening, and it makes a good bath tub arrangement.

To wash chamois skins use cold water with plenty of soap, and rinse well in clear, cold water; thus treated, the skins will never be hard, but soft and pliable.

If the house plants become pale and sickly, a doze of ammonia, a few drops in the water you water them with, will revive them like magic. It is the concentrated essence of fertilizers, and acts upon plant life as tonics and sea air upon human invalids.

Things Worth Knowing.

That wild mint will keep rats and mice out of the house.

That flowers and shrubs should be excluded from a sick chamber.

That lime sprinkled in fire-places during the summer months is healthy.

That a little water in butter will prevent it from burning when frying.

That oil paintings hung over the mantle-piece are liable to wrinkle with the heat.

That pennyroyal distributed in places frequented by roaches will drive them away.

Good nature is a gem which shines brightly wherever it is found. It cheers the darkness of misfortune, and warms the heart that is callous and cold. In social life who has not seen and felt its influence? Don't let matters ruffle you; nobody gains anything by being cross and crabbed. If a friend has injured you, if the world goes hard, if you want employment and can't get it, or can't get your honest dues, or fire has consumed or water swallowed up the fruits of many years' hard toil, or your faults are magnified, or enemies have traduced or friends deceived, never mind; don't get mad at anybody, don't abuse the world or any of its creatures. Keep good natured, and our word for it, all will come right. The soft south wind and the gentle sun are not more effectual in clothing the earth with verdure and sweet flowers than is good nature in adorning the hearts of men and women with blossoms of kindness, happiness, and affections—the fragrance of which ascends to heaven.

A Jardiniere, Bird Cage, and Aquarium Combined.

A correspondent of La Nature communicates to that journal a description of a cheap and easily constructed ornamental object that possesses the novelty of being an aquarium, a bird cage, and a jardiniere all in one, as represented in the illustration.

It consists of a large bell glass mounted upon a wooden or iron base, and into the interior of which is introduced a cylindrical glass vessel that has first been loaded with bits of lead or cast iron painted green and other colors, so as to imitate the bed of a spring or clear brook. Upon the bottom of this inner vessel rests a movable perch made of iron rods of small diameter and provided with a foot. The orifice of the cylindrical vessel, as well as that of the bell glass, is covered with wire work having meshes sufficiently wide to admit plenty of air to the birds, while preventing their escape, and sufficiently strong to bear the weight



A JARDINIERE, BIRD CAGE, AND AQUARIUM COMBINED.

of a row of flower pots.

After the apparatus has thus been constructed birds are introduced into the cylindrical vessel, and gold fish into the water surrounding the latter, while pots of flowers are placed upon the wire work that covers the orifice of the bell glass.

The effect produced upon the spectator by this arrangement is said to be very curious, as the birds seem to be living in the water along with the fish.

SINGLE WOMEN.—A clever maiden lady once said that it was far better to be laughed at because you were not married than not to be able to laugh because you were. There is sound logic in that. It is well for woman to marry if she meets a good, true man, who loves her, and whom she loves; if not, she had better remain single.

Burning the Letters.

These dear old letters! Ah! Can I consign them to the flames, And see the cruel tongues of fire, Wipe out the old pet names?

Ah! yes—I may as well—for she Will never say again The tender, loving words that here Were written by her pen.

And yet she is not dead—ah, no— I wish to Heaven she were, Before she took her heart from me, And I took mine from her.

For love can go beyond the grave— It stops not with the breath; It reaches to the unseen world— Yes! Love is strong as death.

But love is not as strong as life, No! Life can live love down; And leave her bleeding in the dust, And bear away her crown.

How strange it would have seemed to me, When these fond words were penned; To know the time could come when she Would cease to be my friend.

Each word here is but mockery, Each line a broken vow; Yet I would give the world to feel That they were valid now.

"Eternal Friendship" does not last, 'Tis broken soon or late; To love forever, means to love Until you learn to hate.

Ah; life is naught but mockery; "Things are not what they seem;" Faith is a shadow on the wall— And love a cruel dream.

Then take these letters kindly flames, I give them all to you; Oh! blot forever from my sight The words no longer true.

'Tis better so—yes, let them feel Thy cruel stinging smart, And turn to ashes, dead and cold As those within my heart.

RENA ROSS.

A Wonderful Cave.

About a mile from the market town of Adelsburg, in Austria, and three miles from Trieste, is to be seen the most wonderful cavern in Europe, and possibly in the world, called the Adelsburg cave, and which has been explored for a length of nearly 3,000 yards, as far as a subterranean lake. The cave consists of several grottoes, from 60 to 70 feet high. The interior resounds with the noise of water, as a little river runs completely through it, forming many cascades on its way, and being finally lost to view in a fissure. This river continues a subterranean course for about eight miles, and after a time disappears into the cavern of Lasse, whence it emerges as a navigable river, called the Laibach. The entrance to the cave of Adelsburg is illuminated with hundreds of candles, and a transparent curtain composed of large sheets of crystalized limestone is seen hanging from the roof. The vast hall or ballroom is about 180 yards from the entrance. It is 500 feet long and 100 feet high, and is adorned with transparent stalactites of every kind of fantastic shape and form. Until the year 1819 this ballroom was the only part known; but at this date the wall of stalagmite was broken through and a series of chambers exposed to view, possessing a cathedral-like appearance, from the stalagmites below. In the Adelsburg cavern numerous specimens are found of the proteus, a kind of lizard that dwells at the bottom of the cavern lakes.

"The happiness of man arises more from his inward than his outward condition," says an exchange, which is a parabolic way of saying that a cucumber out in a man's garden patch won't make him as unhappy as it would if it were located under the front elevation of his vest.—[Yonkers Gazette.

Uncle Tom's Department.

MY DEAR NEPHEWS AND NIECES,—Thanks for the many charming letters this month. I see a number of you are now working in real earnest for the prizes; two more months will decide, so send in some good original puzzles for Xmas; and now some one asks for an explanation of Hallowe'en. It is the name popularly given to the eve of All Hallow or festival of All Saints, which, being the 1st of November, Hallowe'en is the evening of the 31st October. In England it was long customary to crack nuts, duck for apples in a tub of water, and perform other harmless fireside revelries, while in Scotland the Hallowe'en ceremonies partook more of a superstitious character. Here is a story of another Uncle Tom:

UNCLE TOM'S SORROW.

The boys had just returned from an afternoon's shooting, eager to show Uncle Tom what good sportsmen they were—Uncle Tom, who had come from the East to pay a long promised visit, and whose coming had been the great event of the year.

Yet kind as he was to them, full of interest in their studies and their games, they were not a little puzzled by this same Uncle Tom. All of their mother's stories of her early life were full of her favorite brother, who had seemed a very spirit of fun and merry mischief, of the wild pranks he had played, the joyous times they had had together. And now that he was here, they found him a grave and silent man. Only two years older than their bright and cheery little mother; his dark hair was yet full of silver threads; his eyes had a look of patient suffering; his whole manner was that of a man acquainted with sorrow.

He was sitting now on the front porch with the other members of the family, Birdie, the one little, darling sister, standing by his side. The boys threw down their trophies—a dozen beautiful quail, three cotton-tails, and a "jack-rabbit."

Ned, the eldest of the three, in mere fun and thoughtlessness, raised his gun and pointed it at his little sister.

"There is another bird for me to shoot," he said.

The child only laughed, without a thought of fear. Mother said, warningly:

"Ned, Ned!"

But to the astonishment of all, Uncle Tom sprang to his feet.

"Put that gun down, sir!" he shouted in a tone of terrible excitement. "Put it down instantly!" And then, as Ned looked at him in blank amazement, he sank back in his chair, his face ghastly pale and his hands trembling.

"Well," said the boy, "what is the matter? I have not loaded the gun since I shot that rabbit. It's as harmless as an old stick."

But his mother motioned to him to be silent, and going to her brother, she softly smoothed his hair with a caressing touch, as she said:

"Dear Tom, I am very sorry Ned's thoughtlessness should have given you such a shock."

"Never mind," he said, with a shudder; "it was only the old pain. I forgot myself for a moment. But you had better tell them, Mary;" and slowly rising, he took Birdie by the hand and walked away into the orchard.

"What is it, mother?" said Ned, not a little amazed by what seemed to him a very unnecessary fuss.

"As your uncle wishes it," said his mother, "I will tell you of a very sad chapter in his history, which will explain what has just occurred. Years ago, when we were children, in Jersey, Tom had a friend whose name was Aleck Martin. Even as boys their affection for each other was something wonderful, and as they grew older it only increased. They were inseparable companions at school, at college, and afterwards, when they had both become active men of business. Even Aleck's marriage made no difference, for his wife was a cousin of our own, who loved Tom as though he had been her brother, and he almost lived in his friend's pleasant little home.

"Often the two would take a holiday and go off on some short excursion together; and it was on

one of these trips that the accident occurred which has darkened your uncle's whole life. They were staying at a hotel in New York, and before Aleck was up in the morning, Tom went out for an early walk. Seeing in a shop window a very pretty little pistol of a novel make, he went in and bought it. As a matter of course, when he returned to the hotel he went to Aleck's room to show off his purchase. Pointing it at his friend in the merest fun—as you did just now with your gun, Ned—he said: 'Get up, you lazy fellow.'

"'Don't Tom!' exclaimed Aleck, who had a nervous dread of firearms.

"'Pooh! it has never been loaded,' said poor Tom, pulling the trigger.

"'Alas! alas! unknown to him there was a cartridge in one barrel. A sharp report, a groan from Aleck, and then you can fancy all the rest; your uncle calling help, landlord and servants rushing into the room. All the terror and distress that followed.

"'Was he dead?' whispered Joe, the youngest of the boys.

"No; he lived to be taken home, even to leave his bed and to crawl about in a feeble way for five long years; but from that hour he never knew a moment of health or comfort. He had been so proud of his strength, poor fellow, of his youthful, vigorous manhood; after that he was a weak and helpless invalid. But never once did he utter a word of reproach or complaint. Your uncle's bitter and unavailing grief seemed harder for him to bear than all his own sufferings. Tom gave up his business and devoted himself to the care of his beloved friend. Night and day he watched over him with unwearied tenderness, but always, as he has said to me, with a sword through his own heart. Gladly would he have laid down his life

8. John, Eva and Mary went to the pic-nic yesterday. HARRY A. WOODWARD.

3—DROP VOWEL PUZZLE.

P-t-nc-s-v-rt-
P-ss-ss-t-fy-c-n
T-s-s-ld-m-f-nd-n-w-m-n
L-ss-ft-n-f-nd-n-m-n

CHARLIE FLEMING.

4—WORD SQUARE.

Hasty, a tree of several species, a kind of mineral alkali, a pile.

5—DROP-LETTER PUZZLE.

A-l-s-e-l-h-t-n-s-e-l.

6—TRANSPOSITION.

Eh ahtt thifgs nad nrus yaaw,
Yam elvi ot ghitf ronateh yad.

7—BEHEADINGS.

Whole I mean to go at a fast pace, behead and putrefy, behead and transpose and I am a preposition.

My first is an article of clothing, my second is a color, my whole means illwill.

Answers to October Puzzles.

- 1.—"The good are better made by ill, As odours crushed are sweeter still."
- 2.—Grate, rate, ate, tea, eat, at, a.
- 3.—Buttter-cup.
- 4.—987654321—45.
123456789—45.
864107532 45.
- 5.—Advocate.
- 6.—Thistle.
- 7.—Brides-maid.
- 8.—When the cats away the mice will play.
- 9.—Do a little well and you do much.

Names of Those who have Sent Correct Answers to October Puzzles.

John Wm. Forbes, P. Boulton, Richard Kingston, Ada V. Morse, Frank Booth, Ellen D. Tupper, Robert J. Risk, Maggie A. Rowe, Jas. Watson, Harry A. Woodworth, Geo. Barr, Maud Dennee, Charlie Fleming, Fannie Burton, Esther Louisa Ellis, Florence Gamble, Tom Montgomery, Arthur Ryan, G. H. Morgan, Nellie Fitzpatrick, Mary Marshall, Frank Jarvis, Gussie Henderson.

He Saw Widows.

Officer Button, at the Union depot, picked up the other day a memorandum book evidently lost by some one attending the State Fair. All the entries are made in a business-like manner, and some of them are readable. The first entry is: "Shall take \$16 with me to the State Fair. Second-class hotel good enough for me. Beware of pickpockets. Keep your eye open for a good looking widow. View the animals and don't forget to take two clean handkerchiefs along."

The second entry is: "Fair up to the average. Saw a widow in the car going up. Didn't seem to like my style. Somebody has stuck me with a bogus half dollar. Saw another widow on the grounds. Rather too stout. Viewed the animals and was kicked by a steer."

Third entry—"Good attendance. Slept on the floor. Jam on the street-cars. Passed the bogus money off on a bootblack. Saw a widow at the hotel. Most too lean. Went to the theatre last night. Saw several widows, but no chance to make an impression."

Fourth entry—"Big crowd on the grounds. Beat my way in. Saw a widow on the fence. Most too boisterous for my locality. Saw a horse race. One horse beat all the others. Viewed the machinery and was hit on the ear by a loafer. Saw a widow viewing the headless rooster. Mouth most too large for my part of the State. Slept in a barn for nothing."

Fifth entry—"Saw a widow in the post-office. Blind in one eye. No good. Big jam. Tried to beat my way in, but couldn't. Saw a horse-race. Saw a widow on the grand stand. Bowed to her. Cold cut. Viewed the big ox. Saw a widow in Honey Hall. Raised my hat. Got left. Feel blue."

As that was the last entry it would seem as if he gave up in disgust and started for home. A person supposed to be him "saw a widow" at the depot Friday afternoon, and became so obnoxious that she hit him over the head with an umbrella and two or three men reached for him with cowhide boots.



1—ILLUSTRATED REBUS.

if he could have undone that one act of thoughtless folly. But it could not be.

"Aleck went to his rest at last, leaving poor Tom a broken-hearted man. He showed me, one day, a little case he carries in his pocket. In it are two photographs of Aleck—one taken when he was in all the pride of his early manhood—such a fine, handsome, noble-looking fellow; the other as he was in his last days—a wasted invalid with the impress of death on every feature. 'I look at them every night,' he said to me, 'and always with the cry, 'God be merciful to me, a sinner.'"

Mother's eyes were full of tears as she ended, and for a few moments the boys were silent. Then Ned knelt down beside her and put his arm around her waist.

"Mother," he said, earnestly, "I promise you on my word of honor that I will never again point a gun or a pistol, loaded or unloaded, at any human being as long as I live!"

And as his mother pressed her lips to his forehead the other boys standing behind him said, "And so do I." "And so do I."

Puzzles.

1—NUMERICAL ENIGMA.

I am composed of 9 letters.
My 8, 3, 4 is a liquor.
My 5, 1, 8 is to ask earnestly.
My 9, 6, 8 is to embrace.
My 8, 7, 3, 4, 2 is to reduce to powder.
My whole is a city in the British Isles.
HARRY A. WOODWORTH.

2—BURIED RIVERS.

1. Ethel, being the elder of the two, marched in front.
2. Please do not go to-night, Edwin?
3. Is Rose in Edinburgh or Glasgow?
4. That boy never meant what he said.
5. Oh! I ought to have told you that before.
6. What a rich color adorns the cheeks of that young lady.
7. Why don't you shoot that cur, Alfred?

OUR GRAND PREMIUMS---1883-4

Our Rules.

1. The name sent in must be a new one, and the subscription for one year (\$1.00) must be enclosed.
2. No prize is given for any new name where the cash commission is deducted.
3. The prize is for the person who sends in the new name and not to the new subscriber.
4. Choose your prize when remitting, otherwise we will be at liberty to choose for you.
5. Every subscriber, every member of a subscriber's family (boys or girls), all Postmasters and School Teachers are entitled to compete for these premiums.
6. All our plants, seeds and books will be sent to you with all charges prepaid, except otherwise stated.
7. This premium list is good until March 15, 1884.

Our readers will bear in mind that the FARMER'S ADVOCATE has never been surpassed or even rivalled for the usefulness and value of its premiums.

Ladies and gentlemen who have a few hours to spare can do nothing more profitable or more useful than to canvas their neighborhood to secure new subscribers to the FARMER'S ADVOCATE AND HOME MAGAZINE.

BEAR IN MIND that we give a liberal cash commission, if you would rather work for cash than for our premiums. Many of our agents are making great wages working for cash commission. If you

"Lorne and Louise," our Dominion Picture. This lithograph was specially gotten up at great expense for the FARMER'S ADVOCATE, and is original in design. A few copies are still on hand.

The three pictures last named are each 24 x 30.

BOOK PREMIUMS.

A series of works for young people, well illustrated, with stiff paper covers. Send in one new name with \$1.00 and you will receive your choice of the following series:

- Grimm's Fairy Tales, 70 Illustrations.
- Andersen's Fairy Tales, 60 Illustrations.
- Wood's Boy's Own Natural History, 300 Illustrations.
- Mrs. Caudle's Curtain Lectures, 60 Illustrations.
- The Story of a Feather, 70 Illustrations.
- Oliver Twist, by Chas. Dickens.
- Hero Worship, by Thos. Carlyle.
- Tennyson's Complete Works.

Each volume is complete. Send in two new names with \$2.00 and you will receive your choice of the following series as a premium:

- The Swiss Family.
- Sandford and Merton.
- Esop's Fables.
- Paul and Virginia.
- The Vicar of Wakefield.
- Robinson Crusoe.
- Games and Sports for Boys.
- A Year at School, by "Tom Brown."
- The Pilgrim's Progress.
- Ancient and Modern Magic.

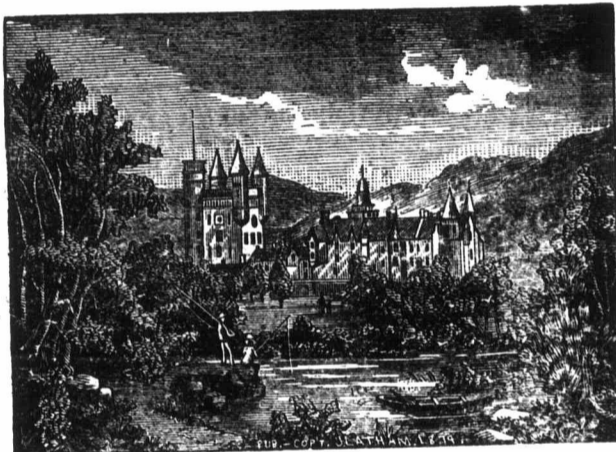
The following series are well illustrated, and complete without abridgement. The paper is of good quality, the binding firm and attractive, while the illustrations are many and excellent. Send in 3 new names with \$3.00 and you will receive your choice of the following series as a premium:

- Dod's Beauties of Shakespeare.
- Scott's Poetical Works.
- Sydney Smith's Essays.
- Burns' Poetical Works.
- Moore's Poetical Works.
- Wise Sayings of the Great and Good.
- Cowper's Poems.
- Capt. Cook's Voyages.
- The Adventures of Don Quixote, with six illustrations.
- Life and Adventures of Robin Hood.
- Macaulay's Essays.
- Cruden's Concordance.
- Arabian Nights.
- Things in Doors, for Young Folks, 470 Illustrations.
- Things Out of Doors, for Young Folks, 470 Illustrations.
- Gulliver's Travels, 95 Illustrations.
- A Journey to the Centre of the Earth, and Five Weeks in a Balloon, by Verne.
- 20,000 Leagues Under the Sea, by Verne.
- Tales of the Coast Guard.
- Ivanhoe, with 4 Illustrations.
- Waverley, by Scott.

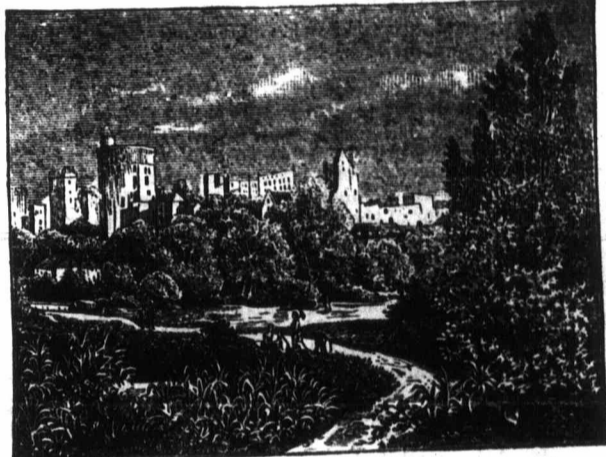
The Soja Bean. A package of this most prolific plant, which is both a vegetable and forage plant, pronounced to be the richest of human food, whilst the straw is eaten by sheep and cattle: sown in May and ripens in August. It is an excellent bearer, resembles a bean and bears pods in bunches of two to five, which contain two to four smooth, oval, nankin-colored seeds. See FARMER'S ADVOCATE for March, 1883, page 75,

1 packet of the Large Russian Sunflower, one of the best and most productive plants for every poultry keeper. The flowers have been known to be as large as 17 inches across the face, and literally packed with seed. The seeds are healthy and very nutritious, although somewhat too rich to be entirely dependent upon. Should be mixed with grain or something less nutritious.

2 plants of the Dwarf Juneberry. This plant should be grown in every garden, and particularly on our farms in the North-west. The wood is hard and firm, and endures the extremes of our climate without injury. The flowers appear about the same time as the apple. The fruit is borne in clusters and ripens early. Its size equals the wild gooseberry; shape round; color a reddish purple at first, and become a bluish black when fully ripened. Its flavor approaches the raspberry, a mild, very rich, sub-acid. It produces fruit in enormous quantities, and bears every year. It is also perfectly hardy, not being injured



BALMORAL CASTLE.



WINDSOR CASTLE.

prefer to work for cash commission send for our terms to agents.

Send your names as fast as secured. Some of our best agents are ladies. Ladies can do just as well as men. A lady can canvas her neighborhood and make a handsome sum thereby. There is no better business for anyone to take hold of temporarily, if having only some spare time, day or evenings, or permanently, if out of employment, or in poor health, than to canvas for the FARMER'S ADVOCATE.

Any sample copies will, as well as circulars, &c., be sent you on application. Be sure and have one of our illustrated posters put up in a conspicuous place.

Address,--THE FARMER'S ADVOCATE, London, Ont., Canada.

Your choice of the following for One new name with \$1.00:

Yes or No, by Millais, Pres't R. A., of England. This fine picture tells its own tale. Here is the letter, and shall it be "Yes or No." Size 22 x 26.

Life's Voyage is a most pleasant chromo and well worth being won at such a trifling expense of time or labor. This engraving is printed in colors, and represents childhood, youth, manhood, and old age in a pleasing and interesting manner. Everyone is delighted with this premium.

For Two new names with \$2.00

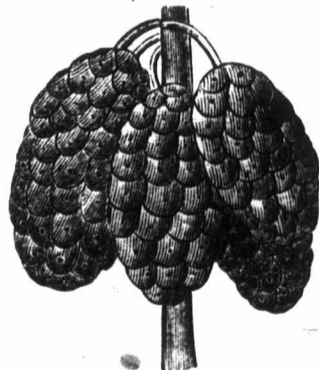
Balmoral Castle or Windsor Castle.

The above are the two best known and most beautiful residences of Her Majesty the Queen. No description is necessary, and as to the worth of the chromos they command a ready sale even now at \$2.00 each. See cuts above; or

SEED AND PLANT PREMIUMS.

For One new name and \$1.00 your choice of the following:

- A useful collection of Vegetable seeds, 12 varieties, and a packet of one of the choicest novelties for 1884; or
- A choice collection of Flower Seeds, 12 varieties, and a packet of the new German Pansy; or,
- 1 plant of DOWNING'S EVER-BEARING MULBERRY.



The beauty of this, as a lawn or street tree, is quite enough to commend it, but in addition to these merits they yield an abundant supply of large refreshing berries for about three months. Henry Ward Beecher says: "I regard it as an indispensable addition to every fruit garden, and I speak what I think when I say I had rather have one tree of Downing's Ever-bearing Mulberry than a bed of strawberries."

by wet, cold, or dry weather, and needs no special treatment. Fuller says that "the Juneberry is one of those fruits which have always been neglected. Why, I am at a loss to understand, for it possesses naturally better qualities than even the currant and gooseberry. The berries are more firm than the raspberry, blackberry, or strawberry, consequently will bear carriage well."

3 plants of the "James Vick" Strawberry. All we need say of this plant is that it has fully borne out our statements regarding its merits. During the past season we have received universal praise from subscribers who won any of these plants, and no doubt another year will bring even greater satisfaction.

"The Wild Garden." "The girls'" special premium.-- Anyone who has planted and cultivated flowers in neatly laid out beds or carefully planned borders, &c., is aware of the labor and constant attention required. To those who cannot give this care, the "Wild Garden" presents a substitute, and has no rival. Select a piece of ground, thoroughly pulverize by spading and raking, sow seed broadcast as thinly and even as possible, rake lightly, then press surface with back of spade and water thoroughly. The seed consists of a mixture of as many different varieties as we can afford to send you. They comprise a great number of species, and are all mixed together. No one who has not seen such a bed can form an idea of its gorgeous effect. The seeds come up as thickly as they can grow, and continue all summer. Every morning some new, unexpected flower appears in bloom. One packet contains over fifty varieties.

(See next page.)

4 plants of the **Russian Mulberry**, 6 to 12 inches. These are the largest we can procure this season, as there has been such a demand for this useful tree. A leading horticulturist of Nebraska, in which State it has been grown most extensively, states that "For fruit, wind break, ornamental hedges, silk worm food, fence posts and fuel the Russian Mulberry is unsurpassed."



2 plants of the **Jersey Queen Strawberry**. This plant, originated by E. W. Durand, is now pronounced the best variety in the market. In 1882 the Jersey Queen won the first prize for the best quart of any variety at the Exhibition of the N. Y. Horticultural Society, and on the 19th ult. at the same Society's Exhibition for 1883, the N. Y. Tribune reports "that the Jersey Queen again showed its superiority by winning the prize offered for the best two quarts of any variety." A pistillate.

For Two new subscribers with \$2.00, your choice of either; one plant of

Hydrangea Grandiflora Paniculata.

These plants are perfectly hardy, and should be in every lawn and ornamental garden. They frequently grow to the height of 6 or 8 feet; the leaves are of a light green color; the flowers are white, turning to pink before fading. The color of the flowers can be changed to a light blue by mixing iron filings with the soil. This beautiful shrub blooms in August, just when flowers are most needed in the shrubbery, and the plant fairly covers itself with great pyramidal blossoms a foot long. They flourish better if wintered in a cellar pit or deep frame. The plants can be moved easily, with as much earth as possible adhering to the roots, and can be re-planted in the shrubbery or garden in early spring. They also thrive well if planted in tubs; or

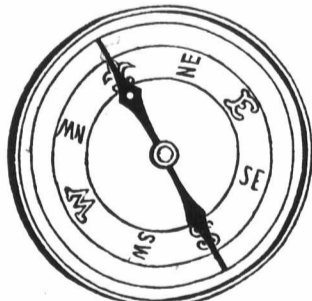
1 plant of the **Chinese Wistaria**. One of the most elegant and rapid growing of all climbing plants. Attains an immense size—growing at the rate of 15 or 20 feet in a season. Has long pendulous clusters of pale blue flowers in May and June, and also in Autumn.

MISCELLANEOUS.

For One new subscriber with \$1.00

The Farmer's Hand Book for 1884. (Copyright.) This book will contain blank pages ruled so that the farmer can keep a correct diary of his farm accounts, purchases and sales of produce, live stock, dairy, fruit and poultry; also a calendar for 1884, giving the moon's changes, and also many useful tables, receipts, with memoranda pages, &c., for the farmers, not found in any other single book.

For Two new subscribers with \$2.00



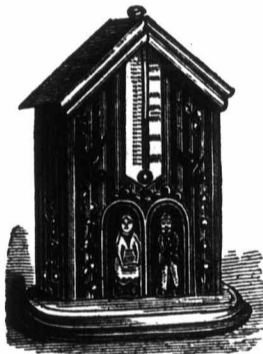
A Pocket Compass. A most valuable instrument. Very useful, easily carried in the pocket. Made of brass, open face, glass cover, with jewel balance. A pocket instrument to quickly give the points of compass

at all times is very convenient. Just what is wanted by all who hunt, travel, or intend to go to Manitoba and the Northwest.

For Three new subscribers and \$3.00

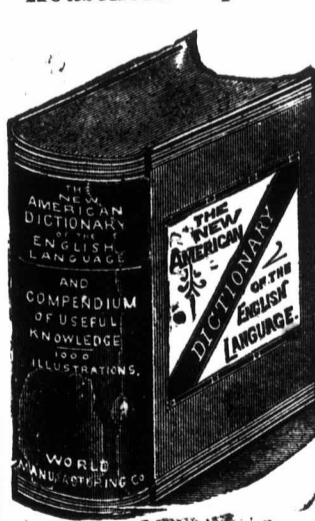


"The Common-Sense Knife" contains Pruning blade, Jack-knife blade, and Budding or Spaying blade. Probably every farmer, gardener and stockman has often thought of such a knife as this, and here it is. These knives are hand forged from razor steel; famous for their quality, and every blade guaranteed by the manufacturers. Over 2,000 dozen of these knives were sent out by the makers in 1882.



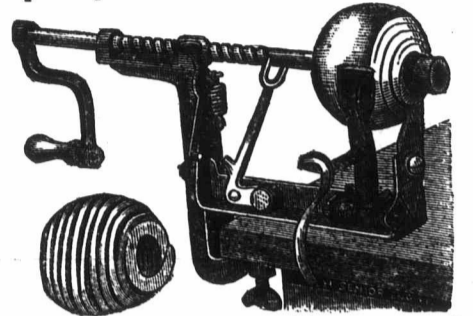
Lovejoy's Metallic Weather Houses.—These celebrated weather houses are warranted by the makers to indicate the changes in the weather with accuracy, and in a simple pleasing manner. They are substantially made and decorated in different colors, with two arches, and a little man or woman in either, arranged in such a manner that the man will come out just before a storm, while the lady steps out to enjoy fair weather. They are about 8 inches in height, with a neat thermometer in front, and make a very pretty mantle ornament. Don't stop until you secure one of Lovejoy's Metallic Weather Houses for your room.

"Household" Special Premium.—THE



NEW AMERICAN DICTIONARY contains 1,000 engravings and more pages than any other similar work published. This volume is a library and encyclopædia of general knowledge, well bound, and contains every useful word in the English language, with its true meaning, spelling and pronunciation, besides an amount of information on different subjects—a complete library of reference.

The **"White Mountain" Potato Parer** is the only machine ever made that will not only pare a potato much better than it can be done



by hand, taking off a thinner paring from every shape or kind of potato, but will go into and clean out the eyes. Per express from London, Ont., at receiver's expense. For Six new subscribers and \$6.00



A Fine Meteor Alarm Clock with luminous face. You can see the time in the dark. The most useful clock ever invented for a bedroom. Every person should have one; saves getting up and striking matches. Remember that it has an alarm, and is warranted by the makers to keep good time. Per express at receiver's expense.

The **"Multum in Parvo" Knife**; blades equal to finest razor. The engraving is so plain, no description is necessary. In all there are contained in the handle a large and small knife blade, horse lance, cork screw,



harness awl, horse-hoof cleaner, nut cracker, screw driver, tweezers for drawing slivers, and a point for cleaning pipe, and a point to be used as an awl, &c. All these close up in the handle, and weighs but three ounces. No boy or family should be without this knife. Per mail, postage prepaid, etc., etc.

Several other useful premiums will be announced in our December issue. Canvas at once, so that every new subscriber can receive the balance of 1883 free, and the year 1884 complete. Last Jan. we were unable to supply the demand.

A Present to Our Subscribers.

Messrs. Croft & Co., Montreal, inform us that they will present one package of their Blood Cleanser to the first applicant from any and every post office in the Dominion.

Commercial.

THE FARMER'S ADVOCATE OFFICE, London, Ont., Nov. 1st, 1883.

The past month has wound up the fairs and fall shows of the various counties and townships throughout the country. Some have been successful in every way, others not so much as their promoters would wish.

The past month has been cold, with little sunshine and very little growing weather, so much so that the fall wheat—especially the late sown—is much in need of a week or ten days at least of growing weather to put it in a fair state to stand the winter.

Many farmers, no doubt, will feel very poor and be inclined to practice economy, perhaps too severely. While we are strong advocates of economy, we do not believe in being mean and niggardly, even if times are hard and money scarce.

WHEAT

Has passed through another month of a dull, quiet, inactive life. The fact is, the price of wheat in Ontario is a long way above a shipping basis, from the fact that there is not enough coming out to supply the mills.

BARLEY.

The prospects are not very flattering. Even the Bay of Quinte and Kingston barley only rates as No. 3 extra.

FARMERS' MARKET.

LONDON, ONT., NOV. 4, 1883.

Table listing various agricultural products and their prices per 100 lbs, including wheat, corn, oats, barley, peas, poultry, eggs, potatoes, apples, butter, cheese, wool, and hogs.

TORONTO, ONT., OCT. 31, 1883.

Table listing various agricultural products and their prices in Toronto, including wheat, barley, oats, flour, rye, potatoes, apples, tomatoes, beans, onions, and hogs.

LIVE STOCK MARKETS.

BRITISH MARKETS, PER CABLE.

Liverpool, Oct. 29, 1883.

Supplies of cattle, homebred and from abroad, have been lighter and the demand improved. Prices are 1c higher than last week.

Table listing prices for live stock markets in Liverpool, including choice steers, good steers, medium steers, inferior and bulls, and sheep.

Much lighter receipts and a brisk demand the sheep market has improved and prices are 1c higher than last week.

Table listing prices for sheep in Liverpool, including best long woolled, seconds, merinos, and inferior and rams.

Montreal, Oct. 29.

The supply of Western cattle during the week has been light and choice shipping lots are scarce, prices for same ranging from 5c to 5 1/2c per lb. live weight, which were about the rates ruling a year ago.

CHEESE MARKET.

Liverpool, 31st Oct. (per cable)—Cheese 50s. London, Nov 4, 1883. LONDON CHEESE MARKET—Eleven factories offered 4,000 boxes on Saturday.

Considering the week feeling in New York, cheese has done remarkably well here to-day. Most of the sales were of early October, and factorymen did not think of holding because the price was a little lower.

Little Falls, Oct. 29, 1883.

Prices have again met with a decline of about one quarter of a cent on the average, the bulk last Monday going at 11 1/2c, and to-day at 14c.

Table listing cheese market prices in Little Falls, including lots, boxes, and prices for various types of cheese.

A meeting of the Galloway breeders will be held in the G and Pacific Hotel, Chicago, at 11 a.m. Friday, Nov., 16th, at which it is expected that all breeders of Galloway cattle attending the Chicago Fat Stock Show will be present.

Special Notices.

If you want a fanning mill try Manson Campbell, Chatham, Ont. His mill has been in general use since 1863, and he has lately added an improved riddle for taking cockle out of wheat.

We are indebted to G. W. Campbell, Secretary Ohio State Horticultural Society, for a copy of their very interesting 16th Annual Report.

Dio Lewis' magazine for October has been placed on our table, and it is one of the most interesting monthlies which we read. It is fresh, useful and interesting—good for mind and body.

FOOD FOR CATTLE.—The Empire Cattle Food, prepared, as the manufacturers state, from the recipe of the late Joseph Thorley, of London, Eng., is strongly recommended as a preventative against nearly all the diseases of horses, cattle, and other live stock.

ONTARIO AGRICULTURAL COLLEGE, GUELPH, June 20th, 1882.

To the Empire Horse and Cattle Food Co.:

DEAR SIRS,—We have made a thorough trial of your "Empire" Food during the last two years, and can with confidence recommend it to those requiring to tone up, top off, appetite, and generally invigorate all kinds of live stock.

Yours, WM. BROWN, Professor of Agriculture and Farm Superintendent.

NEW ADVERTISEMENTS.

THE FARMER'S ADVOCATE refuses hundreds of dollars offered or advertisements suspected of being of a swindling character. Nevertheless we cannot undertake to relieve our readers from the need of exercising common prudence on their own behalf.

THE GREAT CLYDESDALE SALE OF THE SEASON!



GALBRAITH BROS.

will sell at Public Auction during the week of the FAT STOCK SHOW;

THURSDAY, NOVEMBER 15,

within the Exposition Buildings, in Chicago, Ill.,

25 HEAD of their celebrated CLYDESDALE HORSES

Consisting of stallions and mares from one up to four years old. This is a rare opportunity of getting the best blood in the country.

For further particulars apply to GALBRAITH BROS., Janesville, Wisconsin.

Catalogues with full pedigrees will be ready in a few days.

A VALUABLE ESTATE FOR SALE

AT A VERY LOW PRICE,

Containing 520 acres of choice grain and grass lands, 275 acres well improved, balance in oak timber; 150 acres of rich prairie. Buildings consist of 1 dwelling of 13 rooms and 5 closets, 4 barns, 1 large corn and wagon house, 1 brick smoke house and other outbuildings; 5 acres in apple orchard; a good mill site on the place; 2 miles from churches, railroad depot, store, etc.; situated 6 miles west from Hastings, Barry Co., Mich. Interest at six per cent.

For further information and terms (which are very easy), write to or call on

Z. B. HOYT,
IRVING, MICH.

GUELPH 38TH CHRISTMAS FAT STOCK SHOW AND FAIR.

The annual Christmas Fat Stock Show and Fair under the auspices of the Guelph Fat Stock Club, will be held in the

CITY OF GUELPH

Wednesday & Thursday, Dec. 12 & 13, 1883

when liberal prizes will be given for the best **FAT CATTLE, SHEEP and HOGS**

For particulars see prize list, which will be issued shortly.

GEORGE HOOD, President.
JAMES MILLAR, Secretary.

VIENNA BAKING POWDER

S.H. & A. SEWING
PROPRIETORS
AND
MANUFACTURERS
57 & 61 ST. JAMES ST
MONTREAL.

For Sale by all Grocers.
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GURNEY & WARE'S STANDARD SCALES.

Have taken 1st Prize at 22 Provincial Exhibitions; 1st Prize Provincial Exhibition, London, 1881. Prizes taken in England & Provinces of Quebec and Nova Scotia. Hay, Cattle, Coal, Stock, Mill, Grain, Dairy, Rail-road and Grocer Scales. None genuine without name on. All makes of scales promptly repaired. Send for catalogue to **GURNEY & WARE,** 201-1 com Hamilton, Ont.

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94 King St.,
LONDON, - - ONTARIO.
A FULL STOCK ON HAND.

Orders from Dealers Solicited. Samples and Price List sent on application.
T. C. HEWITT,
MANAGER,
196-z

FAY Currant CRAPES ALL BEST, NEW AND OLD.

SMALL FRUITS AND TREES. LOW TO DEALERS AND PLANTERS. Stock First-Class. Free Catalogues. **GEO. S. JOSSELYN,** Fredonia, N. Y.



MARK BUY THE GENUINE BELL ORGAN

made only in Guelph.
IT HAS STOOD THE TEST FOR 20 YEARS.

Send for our Catalogue. 214-7
WM. BELL & CO.

CLUBBING OFFER

The **FARMER'S ADVOCATE**
—AND—
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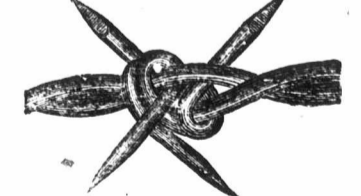
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196-b

Stock Notes.

The 38th Christmas Fat Stock Show and Fair, under the auspices of the Guelph Fat Stock Club, will be held on the 12th and 13th December, and as usual, will be a grand success.

Mr. Simeon Lemon, of Kettleby, Ont., has sold to G. B. Andrew, three Southdown ewes and one ram lamb.

The Jersey cattle breeders intend holding a convention in Chicago on the 15th and 16th inst., during the Fat Stock Show.

Mr. Howard has bought the imported Jersey cow, "Mabel," and the four year old heifer, "Bettina," from Hon. M. H. Cochrane, Hillhurst, Compton, Quebec.

A reference in our last issue to Foot and Mouth Disease being in the United States was an error. What exists in the United States is Pleuro-Pneumonia—its twin brother.

The Illinois Fat Stock Show will be held at Chicago from the 14th to 22nd inst. All particulars can be obtained from the Secretary, S. D. Fisher, of Springfield, Ill., U. S. A.

Messrs. Green Bros., the well-known importers and breeders of Short-horns, have removed from Oakville, Ont., to the Glen Stock Farm, Innerkip, Ont. We wish them increased success in their new quarters.

Mr. A. McLean Howard, jr., of Toronto, has sold his heifer, "Rioters Sylvia," daughter of Mr. Fuller's celebrated champion cow, "Mary Ann of St. Lambeth," to Wm. Rolph, Markham, at a high figure.

At the sale of thoroughbreds at the American Horse Exchange, New York, Mr. J. P. Dawes, of Lachine, Q., purchased the b. h. Mocassin, foaled 1874, by Macaroni, dam Madam Strauss, by King Tom. Mocassin was formerly the property of Mr. P. Lorillard.

The Fat Stock Show at Toronto, under the auspices of the Board of Agriculture, will be held on the 14th and 15th December. Henry Wade, Secretary, Toronto, Ont., will furnish prize lists, &c., on application.

CATTLE DISEASE.—The Huron Expositor says a number of cattle and sheep have died in Logan from the effects of the "Foot and Mouth Disease" prevalent on account of the wet season. What does this mean?—Ed.

A meeting of the American Cotswold Association will be held at the Sherman House, Chicago, on the evening of Friday, 16th November, to which all breeders and others interested in Cotswolds are invited.

The Canada West Farm Stock Association, Bow Park, near Brantford, Ont., have made eleven entries of Short-horns and grade short-horns for the Fat Stock Show. The exhibit will include the famous steer, "Clarence Kirklevington."

Col. John D. Gillett, of Elkhart, Ill., will exhibit thirty-five steers at the next Fat Stock Show in Chicago. He expects more spirited competition at the coming show than hitherto, but hopes to be able to "hold his own" with the best specimens.

Mr. Henry Arkell, of Arkell, Ont., recently sold five Cotswold ewes to Wm. Priven, Greenswold, Indiana, and six imported show ewes, same breed, to Frank Wilson, Jackson, Mich. Both lots were shown at Toledo, Indianapolis, and St. Louis, and were highly successful as prize takers.

At the late combination sale of Jerseys in New York sixty-four animals were sold, averaging \$341 per head. Among the leading sales were Jennie Pogis, one year old, the property of Valancey E. Fuller, Hamilton, for \$3,000; Daisy Pogis, same age and owner, \$2,400, and Glen Pogis, bull calf of last May, same owner, \$500.

The attention of our readers is directed to the great sale of Clydesdale horses by Galbraith Bros. at Chicago, Ill., on the 15th November. This firm have enjoyed for a long time a high reputation for importing the best class of Clydesdales, and this year they have taken 32 first prizes, besides 18 seconds, at various State Fairs. With a partner living in Scotland, this firm have special facilities for selecting and purchasing from the best breeders of Great Britain.

(Continued on page 354.)

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STOCK NOTES.

(Continued from page 353.)

Mr. Harcayer's Jersey bull, Carlo, 5559, died on the 3rd October from the effect of a piece of iron wire, probably swallowed in feeding, which worked its way into and pierced the heart.

Mr. George Wilken, of Scotland, will make his headquarters with Mr. Charles Gudgill, Independence, Mo., at which place correspondents may address him until the Kansas City Fat Stock Show.

We understand that Mr. George Whitfield, proprietor of the model farm at Rougemont, has sold out his business in the West Indies for half a million dollars, and is to return to Canada to live.

Valancy E. Fuller, of Oaklands, Hamilton, Ont., writes that: I am sold out of all the stock I have to spare, having sold some \$39,750.00 in the last three weeks. I have sold Bertha Morgan at \$4,000.

Mr. R. J. Brown writes: I have sold to Mr. R. J. Beemer, of Woolsley, N. W. T., six Cotswold ewes, and one ram; also five Berkshire sows, and one boar. Mr. Beemer saw my advertisement in the *ADVOCATE*. It pays to advertise.

The Hon. A. Macfarlane, Wallace, N.S., has, the *Amherst Gazette* says, secured the services of an Aberdeen farmer, with the object of going into stock raising after the most approved methods, on his excellent farm of 300 acres.

The Messrs. Fawcett, of Sackville, N.B., recently shipped to England a hundred head of cattle. Messrs. Wood, George & Humphrey, shipped 150 cattle and 350 sheep. The sheep were mainly bought in Prince Edward Island. The firm lost by a previous shipment of sheep procured in its own neighborhood on account of the inferior quality of the stock.

W. Heron & Son, of Ashburn, have made the following sales of stock during the past week: To Messrs. Crosby & Douglass, of Belleville, one pair three-quarter Clyde mares, first prize winners at the late exhibition held at Toronto, for best matched farm team. Price, \$500.00. Also Shrops to the following parties, viz.: To Mr. W. Kerslake, Ashburn, one lamb; to Mr. A. Williams, Port Perry, one lamb; to Mr. John Weir, Uxbridge, one lamb; to J. Forrest, Sandford, one lamb; to Messrs. White & English, Cartright, one lamb; all at satisfactory prices.

John Jackson, Abingdon, Ont., has made the following sales of Southdown sheep since middle of August: To William Martin, Binbrook, 1 ram and 2 ewes, imported; Robert Shaw, Renton station, 1 ram and 6 ewes, imported; Peter Metler, North Pelham, 2 ewes, imported; J. W. Springstead, Abingdon, 2 ewes, imported; E. J. Yorke, Wardsville, 1 ram and 4 ewes, imported; T. C. Douglas, Galt, 1 ram and 2 ewe lambs, imported; J. Cuppage, Orillia, 3 ewes, imported; John Glaspell, 2 lambs; J. W. Russell, 1 ram and 1 ewe; John Hannah, 1 ram; Thos. Good, 2 ewes and 2 lambs; Jas. Campbell, lamb and 2 ewes; Jas. Sager, ram lamb; Thos. Russell, 2 ewes; Geo. A. Parrott, 1 ram and 3 lambs; Jas. G. Kidd, ram lamb.

Mr. Smith Evans, Gourcock, Ont., writes:—I have made the following sales of Oxford Down and Cotswold sheep and Berkshires pigs this month: Four Oxford Downs and 3 Cotswolds and 7 pigs, to Mr. Joseph Evans, County of Essex; 1 ram lamb and 1 ewe lamb, Oxfords Downs, and 2 pigs to Mr. D. McKay, Owen Sound; 1 ram lamb and 1 pig to Mr. H. Kribs, Waterloo; 1 ram lamb and 1 pig to Mr. John Johnston, Puslinch; 1 pig to Mr. John Crane, Nichol; 2 pigs to Mr. J. Woodhouse, Guelph Township; 2 pigs, Cotswold, to Mr. T. S. Armshaw, Guelph Township; 8 ewes to Mr. Peter McGregor, of Erin; one shearling ram to Mr. Tindall, of Fergus; 1 ram lamb to Mr. T. Hammond, of Guelph Township. Have just added some more very fine imported Oxford Downs to my flock—1 ram and 3 shearling ewes, all imported. It pays to advertise in the *FARMER'S ADVOCATE*, the best farmer's paper published that I know of for the same price.

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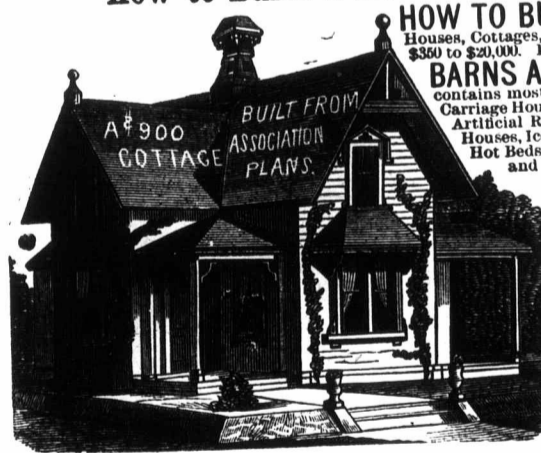
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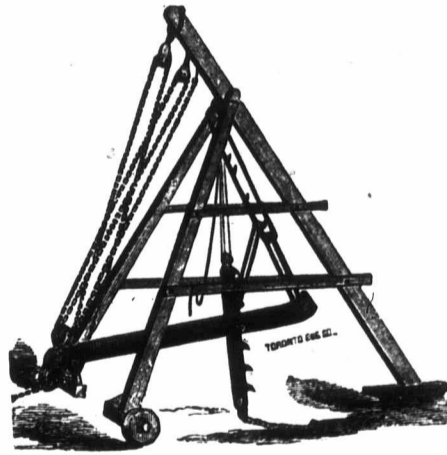


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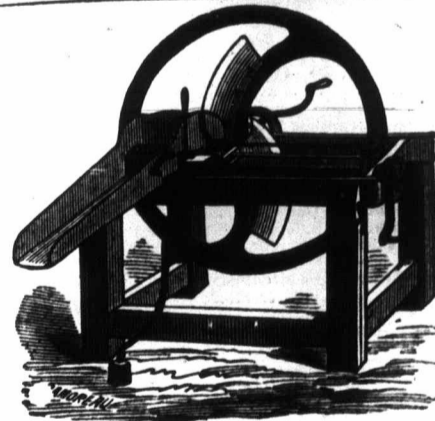
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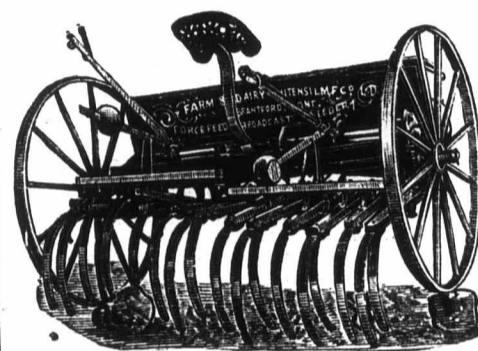
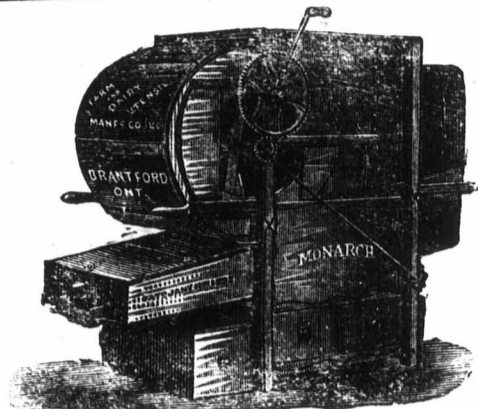
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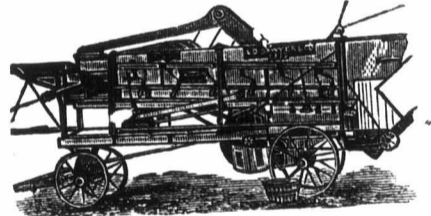


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