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en light advances 0tations; cargoes quoted about 6d. e West was firm, dull and inactive. oats steady, and d; wheat, 9s 6d to peas 41s to 41s 6d; fancy 8s.10; spring 1.06 to 81.07; to 75c; rye 60c. 34 to 81.36 for No. and old winter red barley 81.10 to e; oats 45c to 52c; on to prime. 81.73; Treadwell ring 81.60 to 81.75; 8 to 81.13; oats 90c s 90c to 81.20; hay 8.50; potatoes 45c eggs 21c to 23c per b; 18c; laid 15c to lb.; he f 84.50 to

Sept. 7th, S. R. oneymoon, a 6-year ata, 4 years old for is 10th, two years, 81 gs., and Simon 75 gs. The general ulls. re Whitehall, Eng- a Scotia, bought ily laughn, 51 gs., Oxford and Skid- bought by Sir Cur- made 250 gs.; Lady of Oxford 31st, less e, with some other up to 2307; each on ada, bought Oxford

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FARMER'S ADVOCATE.

"PERSEVERE AND SUCCEED."

VOL. X.

LONDON, ONT., DECEMBER, 1875.

NO. 12

The Farmer's Advocate!

PUBLISHED MONTHLY BY WILLIAM WELD.

OFFICE: 96 DUNDAS STREET WEST, LONDON, ONT.

TO SUBSCRIBERS:

TERMS.—\$1 per annum, postage paid; \$1.25 when in arrears. We cannot change the address of a subscriber unless he gives us his former as well as his present address. Subscribers should always send their subscriptions by registered letter, and give their name and post office address in full.

With this number our subscribers will find an envelope and a reminder of "how they stand." A large number of letters containing subscriptions have been received, but either from name of post office not being given, or name of subscriber being omitted, many now appear in arrears who should not. In all cases where a subscriber's account appears incorrect, they will oblige by sending date of remittance, from what post office mailed, whether registered or not, and through what post office they received their ADVOCATE, and then the necessary corrections will be made.

TO ADVERTISERS:

Our rates for single insertion are 20c. per line—\$2.40 per inch, space of nonpareil (a line consists on an average of eight words).

Manufacturers' and Stock Breeders' cards inserted in "Special List" at \$1 per line per annum. Condensed farmers' advertisements of agricultural implements, seeds, stock or farms for sale, or farms to let, not to exceed four lines, 50c., prepaid.

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

FREE! FREE! FREE!

To all NEW subscribers to THE FARMER'S ADVOCATE for 1876, the balance of the year 1875 from the time the subscription is received will be sent free, that is, the paper will be sent to January 1, 1877.

New subscribers will be considered those whose names have not appeared on our books during 1875.

We trust this liberal proposal will induce every present reader and friend of the paper to use his best efforts to extend the circulation and usefulness of their favorite paper.

To Our Readers.

As this number closes the tenth volume of your ADVOCATE, we return our thanks to you for the liberal support accorded to us. We are happy to inform you that the circulation has greatly increased during the past year. We have labored to place in your hands a journal that is unobjectionable to any party, and to make it a useful and welcome visitor to every home.

The various departments of the journal have been conducted with a view to interest all parties concerned in agricultural pursuits. The youngest child is interested, and this to the mature should be a great consideration, as by adding amusement to instruction much good is done. The wealth of our country has been increased by the information furnished in regard to seeds, stock and implements, and many of our readers must have profited materially by the information.

NEVER TOO OLD TO LEARN.

As your paper has every year increased in circulation, we have been enabled to improve it, and we believe our engagements and promises have been fulfilled to you all.

We feel every confidence in your approval and continued support. Greater exertions will be made to make each department more complete and to improve the journal in every respect; to make the volume for 1876 far superior to any previous year. We trust that each one of you will try to aid by adding one new name to our list. Unity is strength.

The Opening of the Northern Division of the Intercolonial Railroad.

The Telegraph, St. John's, N. B., in its issue of Nov. 10, gives a graphic and very interesting report of "The event of the day," the opening of that part of the Intercolonial Railroad which lies between Moncton and Campbellton, a distance of 185 miles. The Telegraph, justly appreciating the great importance of this memorable epoch in the history of the maritime provinces, with commendable enterprise publishes a very valuable supplement of sixteen closely printed columns, giving a brief history of the inception and progress of the undertaking, and a description of the road and the country through which it passes. The beauty and magnificence of the scenery along the line, and the agricultural, commercial and maritime resources to be developed are all presented to the reader. It is with no little pleasure we transcribe some brief extracts. We hope to refer to it again.

It (the Intercolonial Railway) will be a bond of union not only between the different parts, but a link in the chain that will bind all the provinces together as well as aid in uniting for commercial purposes the fair and vast Dominion of Canada with the great Republic of the United States; a link also in the great iron chain, which, perhaps, even in our day, will unite the two great oceans, and prepare new routes for commerce across this northern continent.

The Intercolonial Railway connecting with the G. T. Railway at Rivere du Loup, on the River St. Lawrence, and with Moncton at the head of the Petitcodiac in this province, forms the link between the great railway system of the upper provinces of the Dominion and those of New Brunswick, Nova Scotia, and the United States. This portion of the Intercolonial is about 374 miles long, crosses all the rivers which water the eastern part of New Brunswick, opens districts of which the value in an agricultural sense is yet fully to be known, and taps the various towns on the seaboard. But, gratifying as are the results already shown by the railways in operation in the maritime provinces, these are but parts of the great Intercolonial Railway which is now so near completion, and which, when completed, will form the great link which will unite Canadians one with another in common interests and sympathies, and bind in the bonds of amity the provinces of British North America. In this chain of fellowship New Brunswick forms the central link, while joined to it on the south and west are Nova Scotia and Prince Edward Island, and on the north and west the provinces of Quebec and Ontario and all the vast territory which lies beyond, and whose populated extent and greatness it remains for the future to determine.

The distances by the Intercolonial are: From Toronto to Miramichi, 930 miles; to St. John, 1,004 m.; to Halifax, 1,192 m. From Montreal to Miramichi, 597 m.; to St. John, 761 m.; to Halifax, 687 m.

Besides the 330 miles of the Intercolonial in New Brunswick, there are over 400 more actually constructed on the other lines, and in a short time New Brunswick, with a population of 285,000, will have 800 miles of completed railway.

The Intercolonial has connection with the Grand Trunk in Quebec, Consolidated E. & N. A. Rail-

way in New Brunswick, and the Windsor and Annapolis Railway in Nova Scotia. It will meet the New Brunswick Railway at Rivere du Loup, when the latter is completed, and the projected Miramichi Valley Railway between Fredericton and Newcastle.

The Manufacturers' and Mechanics' Exhibition, St. John, N. B.

The Manufacturers' and Mechanics' Exhibition of St. John was held on the 27th of Sept., in the rink of that town, which was tastefully fitted up for the occasion. The opening was conducted with becoming ceremony. His Excellency, Lieutenant Governor O'Grady Haly, Administrator of the Government of the Dominion, Lieutenant Governor Tilley, and Lieutenant Governor Archibald were present, with a host of the influential men of the province, and some ladies contributed by their presence to the splendor of the scene. Few even of the people of the sister provinces had any idea of the progress made by New Brunswick.

"The exhibition is in every respect the finest of manufactures ever witnessed in the province; and it reflects immense credit on the manufacturers who take part in it, and it does prove beyond all doubt that we have made immense strides in manufactures. The Rink is almost as full as it can be, allowing any room for visitors to pass through, and the car shed, in which a great number of machines are shown at full work, is almost as full, the whole space being over thirty thousand square feet."

Of this department, as indeed every department of the Exhibition, the citizens of St. John and the province were justly proud.

The variety of articles exhibited was considerable, hardware and edge tools of different descriptions occupying a large space. There was household furniture of every kind, mantel pieces of marble and marbled slate of exquisite design and finish. Furs formed a varied and beautiful collection. There were carriages and sleighs by numerous makers; jewelry; articles of dress, from shirts to silk dresses, overcoats, hats and bonnets, together with specimens of soaps and candles. On the opening more than 1,500 people visited the rink. Strangers were observed to flock into St. John from all parts. The exhibition proved to be a success. The great attraction for visitors was the machinery department. The News thus speaks of it:—

"The machine department of the exhibition, which is exhibited in the car shed, with abundant room to work, attracts a great number of spectators, who are all interested in observing the work of the different machines in operation. There were about twenty-two machines in the shed, out of forty that were to be sent, and embrace in number and size and power those that can be accommodated in the building, and which can be worked by the twenty-five horse power engine which keeps this machinery in motion. Comparatively little of this machinery is made for sale, but is brought by manufacturers and operated with a view of showing what such machines, made principally in their own establishments, are capable of. That the spectators are interested and instructed, their presence and the remarks made abundantly testify."

In thanking Mr. J. Cornwall, Secretary of the Board of Directors, for his courtesy in sending us full reports of the exhibition, we must express our regret that we were unable to avail ourselves of the kind invitation we received to be present. Nothing would have given us greater pleasure than to be witness and partaker of the success of the great exhibition.

The Question of Importing American Stock Cattle into Canada.

This is not a new question, though it now demands more attentive consideration from the fact that it has been brought more prominently before the farmers of the country in the Address of the President of the Board of Agriculture and Arts, at the Exhibition at Ottawa. Great advantages, he held, would have resulted to Canada had she the opportunity of purchasing, in the great cattle market in the West, cattle raised and grazed cheaply on the Western prairies for the purpose of being fed in Canada on roots and coarse grains. He added: "As a sufficient number of cattle are not raised in Canada to consume our roots and coarse grains, our own Government may be induced to repeal the duty imposed on American stock cattle coming into Canada."

To such a measure as is here proposed for the Government to take up there are, we hold, very serious objections. That "the feeding of large numbers of cattle would furnish the cheapest and best of all kinds of manure, that of the barnyard, and would tend more than anything else could to the recuperation of impoverished soils," is true, there can be no doubt. Our own experience for some years has proved to us, were proof necessary, that the profits to be realized by the feeding of a large number of stock on roots and coarse grains, with hay, straw, chaff, and other dry provender, are very great. The stock, if judiciously purchased, are always sure to pay well when fattened for their keeping, and there is now a better demand for Canadian meat than ever heretofore. The prices of beef and mutton have advanced within the last decade more than fifty per cent. in this market. And the manure made is of as great value as the profits often realized by the sale of the fattened stock. So fully assured are English farmers of the great value of the manure, that they consider it a sufficient remuneration for all the feed used and the labor of attending to the stock, even were there no immediate cash profits from the sale of the animals.

As to the great advantages accruing from the feeding of cattle in much larger numbers than has been heretofore done by Canadian farmers, we entirely agree with the opinions expressed; but any one must, we think, have given the subject but partial consideration when he proposes the importation of Western cattle into Canada for the purpose. The great probability is that such a measure would introduce into the country that destructive disease known throughout the United States as the Texas Cattle Fever. Were this to be the case, the inevitable consequence would be a loss to the country incomparably greater than any profit we could hope to make from feeding the imported stock, even were the additional inducement realized of attaining a ready market for our fat cattle in the Eastern States. Let us cautiously survey the danger to which we would render our own stock liable.

The Texas Cattle Fever is a fatal and very contagious disease. It is communicated to all the cattle in a neighborhood where it makes its appearance with alarming rapidity. It spreads from town to town, from county to county, and it can only be stamped out by at once slaughtering every beast infected or likely to be infected. Every year the farmers in the Eastern and Middle States are in dread of the time when the drovers from the Western prairies drive their herds through the country seeking purchasers. This season we hear of its appearance along their route as usual. In Cheshire County, Massachusetts, we are told, the communication of the disease is attributed to the passage of a lot of Texas cattle which were purchased at Albany and driven through those towns

and peddled out to the butchers. The consequence has been as might have been expected—there has been great mortality among the farmers' herds everywhere around, and so great is the alarm that but little beef, we are informed, is sold in that neighborhood at the present time. This is but one instance of a wide spread calamity.

From the Massachusetts *Ploughman* we extract the following bearing on this subject: "Many of the readers of the *Ploughman* will remember the excitement caused by the prevalence of this disease in 1867, which resulted in calling a convention, which assembled in Springfield, Ill. After a thorough examination of the subject, the convention recommended the enactment of a law prohibiting the entrance of Texas cattle into the Western States between the months of March and November. Since that time nothing has been heard of the disease until last year, when it was evident that cattle were forwarded direct from the plains of Texas."

Are we willing to import Western cattle at the risk of introducing into our country this contagious cattle fever? Instead of regretting that there is a duty levied on imported cattle by our Legislature, let us rather rejoice that the dividing line has so far at least kept the disease from entering our land and ravaging our herds. Let us, instead of incurring so great a risk, endeavor by rearing our own young stock to increase our herds and flocks. The number of calves and lambs sold to the butchers is quite too large for the interest of the farmers. From the live stock at present in Canada enough cattle might be had to consume all the roots and coarse grains that will be grown in the country.

The land owners and farmers of England are now calling for an enactment to prevent the importation of live stock into that country, that they may be enabled to stamp out the Foot and Mouth Disease that has decimated their cattle, and they say that as long as the importation of live stock is permitted they cannot stamp it out, as they would soon do otherwise. The west of the European continent is never free from that disease, as the western prairies of America are always subject to the Texas fever, and with the importation of cattle the disease is continually reintroduced to the country, causing to the landowners and handholders a loss that seems almost incredible. We may well dread any measure that might be a means of communicating to our cattle any of those contagious diseases.

We add as a note of warning this brief item from the *London Farmer*:—"The number of cases for the quarter ending the 16th of October, was as follows: In Somersetshire, 83,000; in Cheshire, 50,000; in Dorsetshire, 48,000; in Gloucestershire, 44,000; in Oxfordshire, 39,000; in Warwickshire, 32,000; in Norfolk, 31,000; in Cumberland, 23,000. Throughout England and Wales there were for the same time over 500,000 cases. The money damage is estimated at \$1,000,000."

Shall we Cultivate our Orchards or Keep Them in Grass?

There are in every science some questions on which the professors seem never to arrive at a final decision. A question that has led to great strife of words may, after the lapse of time, seem to be no longer the vexed question that it had been, when some occurrence, merely temporary it may be, and proceeding from some extraordinary circumstance such as may not happen again in half a century, disturbs the apparent calm and we find the question has not been decided. Of this class the question—"Shall we keep our Orchards in Grass?" is one.

There seemed to be a pretty general consent among the writers on fruit cultivation that orchards should be cultivated. True, some held the opposite opinion, but they were the few. There is now to be an entire change in this matter. Change is the order of the day. Some who had till now been in favor of the cultivation of the soil around fruit trees, declare themselves converts to the opposite system. An American writer on fruit growing asserts his change of opinion; then the President of the Fruit Growers' Association of Ontario says the experience of the last season has led him to change the opinion he formerly held on the subject. Trees around which the ground was well cultivated were winter killed, while those growing in the unbroken grass plot were uninjured. Others reason in like manner. In short, all the advocates of this theory take the same ground; in the winter and spring of 1874 their observations convinced them that there is less danger of trees being killed on grass ground than if the ground were cultivated. While admitting the correctness of their observations as far as they extend, we cannot agree with them that they have proved their case. They only show that where no mulch has been applied as a protection to the young trees they are more liable to be frost killed in the grass ground—in other words, that the turf being in itself compact, and closely interwoven with the roots of the grasses, the frost cannot penetrate so easily and do so much injury to the tender roots. This is the sum of the pleadings. Now, hear the other side.

The preservation of the roots from the injurious effects of frost is the benefit to be derived from their growing in the unbroken grass plot, while the benefits from cultivating the soil around them are wanting. The very great advantages derived from cultivating the soil are admitted by all conversant with its tillage. For the healthiness and the very life of plants, it is necessary that heat, light and air have ready access to their roots. The opening of the soil around them by cultivation, whenever it becomes compact in the several seasons, admits the warmth, light and air; the roots in consequence expand and acquire strength and development more freely, and the health and vigor of the tree are continually promoted. We have invariably known such cultivation to be of great service to all trees, whether for shade or fruit. We know them to grow better stems, roots and branches, than trees growing in the grass. The more thorough the cultivation the stronger are the plants, let the crop be what it may. Not only can the roots obtain food from the soil more readily and from a wider area, but also the trees are enabled thereby to draw supplies of nutriment more directly from the atmosphere, and the soil to be enriched from the same source, the cultivated soil attracting ammonia in a greater measure than if untilled.

The same influences of light and heat and air that are so serviceable to the health and consequent luxuriant growth of the tree, must also be very beneficial to the fruit. We know that cultivation by these means improves the size and flavor of fruit, and that, on the contrary, they become deteriorated by neglect.

Now, if we could so treat our fruit trees that they have all the benefits of cultivation, while we at the same time guard them safely from being winter or spring killed, would we not be acting more judiciously than to have them in unbroken grass plots; to preserve them from the frost, and not avail ourselves of the very great benefits they would obtain from cultivation? And this we can do by keeping the soil well tilled and properly mulched. Trees in soil that is cultivated, when not mulched, are liable to be killed by the severity

of our winters. them applies to ground around the using an ev have fruit trees be neither so he be by other trees.

It is not enough to bear some fruit and bear without there is an or grafted. They of any kind, and is tilled as of they put forth quire more than fruit as can be tion, and prote winter and spr mer droughts.

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But the mand for

of our winters. To those who will not mulch them applies this new teaching—to keep the ground around them an unbroken soil. It is but the using an evil to avoid a greater. They can have fruit trees preserved from frost, though they be neither so healthy nor luxuriant as they would be by other treatment.

It is not enough that fruit trees merely live and bear some fruit. Wild, native fruit trees will live and bear without protection. Nigh to this city there is an orchard of such apple trees, never grafted. They neither need nor receive protection of any kind, and the ground on which they grow is tilled as other fields of the farm. Annually they put forth blossoms and bear fruit; but we require more than this—we desire good fruit, such fruit as can be grown only by thorough cultivation, and protected by mulching from the severe winter and spring frosts, as well as from the summer droughts.

The fruit tree may have been grafted with a scion of the best variety, and have given fair promise when taken from the nursery. There soil and cultivation had been such as were most suitable to the growth of the young tree, but when planted the soil around it is no longer cultivated; light and air cannot permeate through the hard soil that is becoming continually more compact; the gentle showers that would, in soil such as the nursery, have sunk gently through the moistening soil to the weeds and been the means of making the fertilizing elements available as plant food, run off over the hard surface or again ascend in evaporation. The tree becomes stunted—crabbed. Just such an orchard is one within bow-shot of this office. The trees, not yet twenty years old, seem old—almost dying; leaves, blossoms and fruit are every season small of their sorts; but they are uninjured by frost; even the spring frost, which proves the most destructive to trees, does them no injury; these are secured in the hard sod.

We adhere to our old method—Cultivate carefully that the trees may thrive and bear good fruit, and mulch around them to protect them from injurious effects of frost.

The Markets and Prices for Our Farm Produce.

The prosperity of the farmer depends on the means of access to good markets and the prices he realizes for the produce of his farm, no less than on the quantity and quality of his crops. The great prairies of the north-west have till now lain waste, a vast wilderness. The inhabitants of that country that might have produced food for millions of people, tilled only a few acres—merely enough for their sustenance. Why should they do more? They had no market for a surplus. In this respect they were worse situated than the farmers of the Western States; they have had a market, though not a very profitable one, the cost of carrying being sometimes two-thirds of the price of the corn when sold.

The home market is the best, taking all things into consideration. It saves, besides other expenses, the costs attending a long carriage. It tends to the improvement of the country and is conducive of a still greater home demand. The home market has enabled the English farmers, notwithstanding the high rents they have had to pay, to attain the pre-eminence they occupy, and to make such improvements in agriculture that their average yield of wheat has increased from six to thirty bushels per acre, and to improve their live stock in a still higher proportion. We should bear in mind that encouraging home manufactures and trade enlarges the capacity of the home market.

But the home market of Canada affords a demand for only part of the produce of our farms.

It is then our interest that all our surplus be sent direct to markets where they are wanted for consumption, not to markets where they are purchased for further transportation. By this means we would retain the profits otherwise made by others, and our country would be known in the great purchasing markets of the world as a producer of the necessities of life of good quality.

Such a market England presents to us for all our surplus. For her ever increasing population, her own limited area cannot raise breadstuffs, meat, and dairy produce in sufficient quantities, and for all she needs she offers a good market and sterling payment. The supply of wheat and flour to the English markets for the two months of August and September was 32,346,408 bushels, and ever since the supplies have been going forward in increasing quantities.

The exports from Canada have been very large this season. The *Montreal Witness* says:—"The richness of the late harvest is telling in every direction throughout Ontario in enlarged exports, etc. The shipments of barley to Oswego to the end of October, since the harvest, were two millions of bushels, about twenty per cent. more than last year; the price averaging from \$1 to \$1.22 there, or about 70c to 90c here. The quality, it is well known, has been remarkably varied. The shipments to Chicago and Western points are also very large. * * * The receipts of wheat at this port were near upon eight millions of bushels.

* * * This represent an immense trade, but a large part of it is merely the handling of wheat bought in Western States for through shipment." We have not returns to enable us to say what quantities were sent forward from Canada by other routes.

The export of cheese this year, up to the month of November, reached the large amount of 422,700 boxes; this, at an estimated average of \$6 per box, amounts to \$2,536,200. When to this is added the price of 92,000 kegs of butter, also exported via Montreal, the result gives a very satisfactory amount for our dairy produce in one market. Besides the butter and cheese, Canadian stock feeders have been doing a pretty good business in horned cattle, sheep and horses, for all of which there is a market in the United States, where the excellence of Canadian live stock is becoming generally known.

Our export trade to the United States not only gives them the profit derived from the direct export trade that we should retain in Canada; by it most of our produce of the best quality is sold in European markets as American, while inferior articles are sold as Canadian. This is the case with our flour, dairy produce and fruit, and is very injurious to the credit of Canada. The credit of producers, as well as of merchants, should be high. The *Toronto Mail* tells us that it has been reported, and the report not contradicted, that there have been large lots of oleomargarine cheese made of skim milk, and with suet grease substituted for the native cream, which it was supposed would be shipped from Montreal to England, and sold as Canadian "trash," unfit for human food.

To obtain good prices we must not forget to send our produce to market in the best condition. We should aim to have the best articles and get the highest prices in the market. The very great difference in prices is owing to the quality of the seed and the good sowing and thorough farming of grain; and the good making of butter and cheese are no small items in the profit or loss of a farmer's crop. Overholding for higher prices is sometimes another loss. Thousands of dollars were lost last year by overholding cheese. Not only had it to be sold in falling markets, but also it had been so deteriorated by holding over too long, that it was necessary to sell much of it at any price that might be offered.

The Patrons of Husbandry.

ANNUAL MEETING.

The second annual meeting of this Order took place in Toronto on the 27th, 28th and 29th of October. The meeting was well attended—there being present forty-seven delegates from the Division Granges, 20 officers of the Dominion Grange, besides a large number of visitors. The meeting was nothing more nor less than a Farmer's Parliament. Strict order was kept during the whole time quite as well as in the House of Commons. Some were there that were fit to fill the halls of our Legislature. The Master delivered a good address. The Order appeared to be in a very healthy and prosperous condition. The election of officers was performed in a most satisfactory manner, the ballot being used.

STRENGTH OF THE ORDER AND ITS ADVANTAGES.

Some of our readers consider we acted injudiciously in aiding the introduction of this Order into Canada. Some discontinued their subscriptions to the *ADVOCATE* on that account. We believed from the first that it was a measure that would be of great advantage to the farmers and to the country at large; it is still our opinion that it is to be the means of effecting much good—this opinion is now held by 14,000 Patrons who now belong to the Order in Canada. Many of our readers wish to know more about the Order: what is wanted and what they are doing, and to be informed of some of its works. With a view of disseminating the objects of the Order, we issue this month a special Grange Supplement, with the Worthy Master's Annual Address and many other items of Grange interest. There may be some members, and even Granges, that attempt to exceed the good results that should be aimed at, and look too much on the immediate return of a few dollars as the great benefit of this Order; but the thoughtful and considerate will, with higher aims, be able to guide the Order discreetly. The trade and business of the country will be, to some extent affected by the Order. The influence of it will be felt in our legislative halls. The welfare of the farmers and of the nation will be better guarded. The Order will become, with judicious management, a strong support to good Government. There must be forbearance among the members; there must be due timeto consider every important act, and both sides of every question must be carefully considered—hasty conclusions must lead to injurious consequences.

THE ORDER INDEPENDENT OF THE UNITED STATES.

It is but three years since the attention of our readers was first called to this Order. The next year a few Granges were established in this vicinity with a clear understanding from the American representative that they were to be under their own control and management as soon as they had 15 Granges organized. The Canadian Granges paid their full dues to the Americans and claimed their independence, as agreed upon. The Americans have tried hard to bring the Canadian Order under their control, but Canadians have been determined to be under no subjection to them. The Canadians have acted honorably and courteously, but will never be subservient. A friendly relationship would be of advantage to both, and will most probably be brought about. At the present time the Americans have no more central power over the Canadian Order than they have over the Queen and British Parliament.

GREAT POPULARITY OF THE ORDER.

The rapid spread of the Order throughout Canada shows that thousands of others approve of its plans and workings. At the present time there are 250 Granges, embracing fourteen thousand Patrons. The increase is greater than was anticipated,

The prospects are that the members will be more than doubled in a short time.

The Patrons are about to apply for an Act of Parliament to give legality to their proceeding; also the Legislature are to be petitioned to reduce the duty on coal oil. The Order is to be placed under a better working system than it has been. The Executive Committee were instructed to make improvements in the working of the Order, and delegates are to be sent to the Maritime Provinces to introduce and establish the Order.

Travelling Agents.

Some of our readers are inquiring of us about tree agents, and we therefore give our views.

This class of the community has been useful in introducing many things that have been valuable to the country. They have been educators of the farmers. The trade of the world has been done by them. They, as a class, are better educated, better informed than the average class of the community, and the wares they introduce are generally of better quality than those in use. The introduction of any new implement has been done by them.

There have been many unprincipled persons who have acted as agents for useless articles, and many have been deceived and swindled by them. Every deception is practised by many to defraud the unwary; perhaps in no way have the farmers of Canada been more duped than by the tree agents. It is true that half the farmers of the country would not have an apple growing this day had it not been for them; but, on the other hand, the loss sustained by farmers may be estimated by millions of dollars through these tree agents. The number travelling is legion. The beautiful plate books shown are tempting, aided by glib tongues. Orders are taken from agents who have no head centre—no nursery to draw from, but pick up trees from any farm that may have a block in the States or Canada. The adaptability of growth has no consideration, and names may be attached to suit the seller.

Thousands of the trees die from being over forced and planted in inferior soils, and tens of thousands are found on bearing to be of inferior quality to those ordered. Greater precaution is needed in purchasing. Be sure that the person from whom you purchase is really a *bona fide* representative of some responsible firm.

Would not a register and license to travel be a protection to the public, such certificate of registration to contain the name and description of the person, the business for which it is granted, the locality in which it is to be used, and the name of the firm for which agent acts? They should also show the responsibility of the firm, as the tree business is so different to anything else, the trees requiring a series of years to show whether they are the kinds that were ordered. We have frequently been through nurseries, and we positively know that some inferior grafted fruit will grow twice as fast and make a finer looking tree than some fruit of superior quality, and vast quantities of the rapid growing kinds are sent out, that are only an injury to the country.

There are really responsible Canadian and American nurserymen; the safest way is to purchase from them. Be sure you are not imposed on by a person who is not responsible.

Vine culture in New South Wales is progressing very rapidly, the number of acres occupied for this purpose being 3,183 in 1873, against 2,568 acres in 1872, and the produce, 575,985 gallons, against 451,450 gallons. These figures relate only to the growth of grapes for wine producing purposes, but a considerable area is devoted to the cultivation of the vine for other objects.

Correspondence.

We have again to tell our correspondents throughout the country that they do forget their friend the ADVOCATE. Now that farmers are resting, leaning on their oars for a few weeks, we hope the correspondence department of the F. A. will be improved by many useful contributions from men experienced in those country pursuits whose improvement it is our interest to promote. Write for the ADVOCATE, that it may continue to be the farmer's paper.

British Columbia—Produce from Seed

SIR:—Please receive my very sincere thanks for the samples of seed wheat received from Agricultural Emporium. You will hear in due time of the returns.

In the mean time, I beg leave to call the attention of the numerous readers of the FARMER'S ADVOCATE to the returns from the seeds I received at the Emporium Seed Store last spring while in London, Ont.

I received four potatoes—four varieties. They did not make a pound in all. One variety—Brownell's Beauty—I got twenty-three pounds from; the Late Rose I got twenty-nine pounds (two potatoes in this variety weighed 7½ pounds); the Early Vermont made twenty-one pounds; from the Surprise, nineteen pounds—altogether, 92 pounds of very fine potatoes.

I also received four samples of turnip seed, one-quarter pound in each. I sowed 2½ acres with the one pound of seed. They will give 30 tons per acre when we pull the crop, which will be a little over a month yet. I will give you the weights of some of the turnips.

We have not had any frost here yet—not even the slightest appearance of cold weather. We have had very fine weather up to a few days ago, a short rainy season having set in. The winters here are much the same as in England.

Quite a number of Canadians have moved here this season. Many of them have secured what will make good farms when improved. There is room for more Canadians here yet—they are the best for this new country.

Yours respectfully,
Langby, B. C., Oct. 27, '75. ADAM INNES.

[We have merely to thank Mr. Innes for his contribution, and to express the hope that he will often favor us with a line. We in Ontario always receive with pleasure reports from the Great Northwest; and we expect so to conduct the F. A. that it shall receive a hearty welcome in all parts of the Dominion.]

Epizootic—Storing Potatoes.

SIR:—The epizootic among the horses is very general in this part of the country, but of a milder form than it was before. My horses did not escape, but Dr. Horse and Dr. Diet carried them through without the assistance of Dr. Physic. We fed them for some days on boiled barley. If I had had no barley, I should have used boiled oats, flax seed and bran. They have still been worked a little on fine days, but not at other times.

Your engraving of a team of English cart horses certainly represents very fine animals; but, as you well observe, they are too heavy and slow for this country. Still, if we wish to keep horses up to the mark of English horses, we must take the same care of them as the English farmers do, and when they come in from work of an evening, rub them dry, especially about the legs, and throw a blanket over them at least for an hour or two; they will then take their feed with a better appetite, and rest better after it.

Hay is scarce in this neighborhood as a general rule, and, should next spring be at all backward, will bring a very high price. We are, apparently, likely to have an open winter. The roads are in a wretched condition, worse where they have been graded than anywhere else.

The best way I ever knew to secure potatoes for winter on level ground, is to open a shallow trench about three feet wide and as long as may be necessary, and pile up the potatoes in that, cover them with a foot of straw and three inches of earth, with

one or more openings for ventilation on the top, to be closed with straw in severe weather. I have known a small pit of potatoes to be covered with two feet of earth and four or five feet of snow over that, and yet in the spring the frost had penetrated to within six inches of the potatoes. Or a pit may be dug in the side of a hill, the potatoes placed in that, and a row of logs close together over them, and then covered with a good thickness of earth—the logs will prevent the weight of the earth pressing on the potatoes. I have taken potatoes stored in this way for seed out of a pit, about the end of June, and found them quite good.

SARAWAK.

[Our friend C. J. will excuse us that we insert only one part of his contributions. Our duties as editor of an agricultural paper compel us to confine the agricultural matter to that portion of the paper appropriated to it. We hope to hear regularly from him.]

Lameness in Pigs.

DEAR SIR,—I have two spring pigs which I am feeding all the pea meal they will eat. One of them got very lame, and appeared to lose all strength in its legs. It would try to get up and then fall again and again. After trying for a while it would appear to get better, and would be able to walk, but very stiff and lame. After lying down again it would be as bad as ever. It was bad about a week, and then got better. They were not shut in at the time, but I shut them in shortly after, and in about two weeks the other one became similarly affected. It is now getting better also. They had always good appetites. I would like to know the disease. What are the symptoms of trachina?
Ailsa Craig, Nov. 13, 1875. J. S.

We think from the description of the manner in which the pigs are affected, that the disease proceeds from worms in the kidneys. We have known other pigs to be similarly affected from this cause. We have known lye mixed with their food to be an effectual remedy. We would be obliged to Mr. S. if he writes to us on the result of this treatment. We would be thankful to any of our readers who could give us any useful information on the subject.

Report of Crops.

Having seen nothing from Teeswater in the F. A., I will tell you a little about the harvest and crops in general. Fall wheat was generally good, but the Scott wheat that some of us got was badly winter killed. The 4 oz. of Clawson wheat was very good, its yield being 13½ lbs.—54 times its own weight. There is a white wheat—called the Michigan white wheat—that is taking the lead around here now. Oats, peas, barley, potatoes and turnips are all good. Spring wheat was badly injured by the frost of the 22nd Aug. The Emporium Oats that I got from you would have been excellent had I got them when sent, but they were so long in coming that they got the same frost that injured the spring wheat. I think I shall have about 70 bushels, and there has been several speaking for seed. I pulled a bunch of heads, 21 in number, grown from a single grain, and the average length of the 21 heads about 14 inches. At any time if you wish to have tested, I will be glad to do it. I tried the Stone's white wheat faithfully, but it was a complete failure.
JNO. PARKINSON.

Teeswater, P. O., Ont.

Thanks to our Teeswater correspondent. Reports of Clawson wheat are all favorable. So are reports of the Emporium oats. In ordering seeds it should always be done early, as there must sometimes be delays in the carrying, and that they may have a fair trial they should be sowed in good time. Will take advantage of the kind offer to test seeds for us.

A very interesting letter from our friend Mr. L. Jones, of Markham, on the Free Grant Lands in Thunder Bay District, will appear in our January No. Our columns are too crowded to permit of its publication this month.

Management

DEAR SIR,—ject by men of their writings, of practical knowledge. The must, make his sure to fail in servation of last five years very much. pay to take so if he does not time and mon men good in farmer has o only make us

Now for n and a perman with barley plan to adjo break up the bushels to t the crop is of stubble and harrows, and day or two, this knocks and drags t collect it in as it is the h as I draw it plow two fu equal number heap, and co for setting manure to e evenly on th I plow the seeding, but turned and field for root evenly on th cultivate it fit for turn roots. As s cultivator a can cultivat proper time barley, whi and run it o every six fe seed sown, row just h field. I ha am satisfie labor, as th cording to t till late in possible, al land is dry and do not on then a ready, and —that par thus effect cours: stal fed early in the best w before you

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Management of Pasture and Meadow Lands.

DEAR SIR,—Much has been written on this subject by men of letters, with many good points in their writings, but I would rather have five years of practical knowledge than twenty years of theoretical. The farmer that would live by the field must make himself acquainted with it, or he is sure to fail in its management. So far as my observation of Canadian farming has gone for the last five years, I think it is possible to improve it very much. The farmer cannot see how it will pay to take so much trouble to feed his land, and if he does not attend to this matter he is wasting his time and money. I find the studies of books and men good in their place, but I also find that the farmer has on the farm his best friend, if he will only make use of it.

Now for my plan of procuring a good meadow and a permanent pasture. I seed down the land with barley in the spring; and I find the best plan to adopt to get it in good order, is to break up the sod early in the spring. Sow oats, 4 bushels to the acre, well worked in. As soon as the crop is off I put in the cultivator and get the stubble and weeds on the top; then put on the harrows, and after that let it lie in the sun for a day or two. Then I put on the chain harrow—this knocks all the dirt off the stubble and weeds, and drags the stubble up in heaps, so I can easily collect it in the wagon or cart. I prefer the latter, as it is the handiest for collecting and unloading, as I draw it all in heaps in the field, after which I plow two furrows around the field, and draw an equal number of loads of the plowed earth to each heap, and cover all the stubbles but a small place for setting fire. I then fetch about 20 loads of manure to each heap; spread this compost heap evenly on the top and sides. As soon as possible I plow the land and let it lie till I get through seeding, but I make sure to have all my heap well turned and mixed. After seeding I turn to the field for roots. I now draw out my compost heaps evenly on the whole field; then I plow, harrow and cultivate it until it is well pulverized. Now it is fit for turnips, mangels, potatoes, beets and carrots. As soon as I have the crop off I put in the cultivator and stir the soil as deep as the team can cultivate. I leave it now until spring. At proper time I plow deep, work well and sow my barley, which I well work in. I take the roller and run it over the whole field, drawing a mark at every six feet to sow my timothy and clover. The seed sown, I take the team with a light seed harrow just half the way around, or once across the field. I have adopted this plan since 1865, and I am satisfied that it more than doubly pays for the labor, as the yield per acre is from 2 to 4 tons, according to the season. By all means keep stock off till late in the fall, and I like to keep them off, if possible, altogether. In the spring I would, if the land is dry, feed the first growth for two weeks, and do not feed too clean. The hay would come on then about the time the old meadows are ready, and then the hay can be mixed in the mow—that part you wish to feed to your cows—and thus effect a great saving, as it will not grow such coarse stalks as if it had been cut without being fed early in the spring. This may not seem to be the best way to an old Canadian farmer, but try it before you condemn it.

Wm. THOMAS,
Dereham.

This contribution has for some time lain secreted in our desk. As it embraces a long course of preparation and improvement, it is not out of season even now. We give insertion to it the more willingly from its being thoroughly practiced by a farmer, the results of his own experience and observation.

Clawson and Stone's Wheat.

DEAR SIR,—The sample of Stone's wheat which I got from you last year rusted badly. I sowed again this year and it rusted and is not good for anything. I found a species of chess among it this year, and I showed it to several people, but they never saw anything like it before. I have sent you a head of it for inspection. I sowed the 4 oz. of Clawson wheat you sent me last fall. It produced 15 lbs. of the handsomest wheat I ever saw. Many thanks to you for it. The Clawson had no better chance than the Scott. I just threw it carelessly on the end of the land with the Scott.

R. F. MERRICK.

Millbank, Ont.

Mr. M.'s report of the Stone wheat is such as we have received from others who tried it. It has in all cases proved a failure, as it was not hardy. Having so much to contend with in the climate, we must be continually making trials and experiments. No haphazard farming can succeed here, especially with such competition as there is in farm products as in other industrial pursuits. All the reports of the Clawson wheat are favorable. Thanks for you sending us the specimen of chess.

SIR,—In any place where the snow went off the Scott wheat in winter, it was much worse killed than the Tredwell, and also in hollows where the snow lay in the spring, and where it escaped both winter and spring killing, it was no such crop as the Tredwell. The Scott was sown in the middle of the field, with Tredwell on each side, at the same time, and in every respect the same treatment. It would have paid me over 200 per cent. to have put my money in the fire when I sent for it. Of the small parcel I cannot complain. I mean to try it again.

The gooseberry plant came in good time, neatly done up; but when I opened it it had no appearance of life. I planted and took as good care of it as I could, but it never budded, and soon became rotten.

HUGH FOSTER.

[There may be always expected a few cases of failure, be the successful returns ever so many; and his report is the only unfavorable one of this wheat that we have received. It has very generally, and in places far apart, fully realized our expectations.]

SIR,—In the Township of Stamford, on the farm of J. W. House, I sowed three bushels of barley; when threshed, the return was seventy-five bushels. Other crops accordingly.

Dunville P. O.

A SUBSCRIBER.

The Apiary.

Keep Bees.

Bees are as useful as chickens, and as easily raised. They afford us a luxurious food—healthy, and might be cheap. Bees require no feeding, and little expense and attention. They want only a comfortable home, covered from the storm and sun, and protected from the marauding millers. They will make their own living, and do considerable towards the living of the farmer. Not many swarms can be prosperously kept in one place, but every farmer may raise honey for home use and a little to spare. Every gardener, every villager might do it. A single swarm of bees, well attended to, will soon produce as many swarms as can be successfully kept in one place. All that bees make is clear gain. They get their treasures from flowers. We should have bees enough in the country to have one always sipping at every flower. The flower is all the time producing honey. The bee should be all the time gathering it. If we had a bee all the time at every flower, honey enough would be produced to supply the world. It is a means of wealth, health and pleasure. Let bees be cultivated—let every farmer have them. They are as useful as cows, and are less trouble. A little attention will teach one to manage them.—*Rural World.*

Commencing Bee Keeping.

The great success in the business must depend much upon the character of the hive you use, and the facilities it affords for the securing of surplus. If you use the box hive of 2,000 cubic inches capacity, with two or four boxes upon the top for surplus, of the aggregate capacity, about twenty to twenty-four pounds per colony is all you can reasonably expect. If you use a hive of about the same room for breeding and winter, and surplus box room for a hundred pounds of honey, you may expect one hundred pounds. If you use a hive with box room for two hundred pounds of surplus, you may expect a surplus of from one hundred to two hundred pounds, if the surplus boxes are in intimate connection with the breeding apartment, and communication between them is free and unobstructed. The principal advantage of this plan is, we secure a full working force the first season.

Purchase eight good colonies of bees, and place them in the apiary where you desire your new hives permanently to stand. When the first swarm issues, place it in the new hive. Remove the old hive a few feet from its stand, setting it bottom upward. Place the new hive upon the stand where the old one has stood. With smoke and rapping drive the bees all out of the old hive. They will enter the new hive upon the old stand with the new swarm. Cut out all the comb in the old hive, placing that having the larvæ or eggs near the entrance to the hive. They will gather over the comb and hatch out all the brood, securing the full force of all the workers in the new hive.

Each of the eight colonies treated in this manner will give the full working force of each colony in the new hive, and give half or more of the honey they gather in the surplus boxes, probably securing an average of eighty or a hundred pounds, or more, rendering the first season as profitable as after seasons. Fifty pounds to each colony would pay double the cost of the colonies the first year. The surplus boxes must not be placed upon the hive until the queen has commenced breeding in the central apartment. This gives full surplus, and will cover all the expense of the new hives, and cost of bees the first season if the field and season are good.—*Jasper Hazan, in Country Gentleman.*

How to Ship Honey.

Place two rows of boxes together, with three or four boxes in each row, or enough to make a fifty pound package; then you can measure and cut two end pieces of lumber an inch thick, and bottom and top boards half an inch thick, and long enough to nail on the edge of the end pieces. Nail a cleat, two by six inches long, in the centre of each end piece, by which to lift the case, and then nail it together, placing the boxes in and tacking a strip one inch wide on the edge of the top and bottom, and on the ends of the end pieces, letting it project only about half an inch over the honey boxes, to hold them in place, and yet not hide the honey and glass from view, as railroad men will handle honey more carefully when the honey and glass are both in plain sight. Box honey is often broken, and its sale is injured by being moved by inexperienced draymen, after it has arrived here in safety; hence the commission merchant to whom it is consigned should be notified of about the time it will arrive, and let him have it removed to his own store by his own cartman. Some may suppose we are unnecessarily explicit, but those who have suffered serious loss will appreciate our words of caution.—*Bee Keeper's Magazine.*

The *California Agriculturist* says:—There are 2,000,000 bee hives in the United States. Every hive yields, on an average, a little over twenty-two pounds of honey. The average price at which honey is sold is twenty-five cents a pound; so that, after paying their own board, the bees present us with a revenue of \$8,000,000. To reckon in another way, they make a clear gift of over a pound of pure honey to every man, woman and child in the vast domain of the United States. Over twenty-three and one-third million pounds of wax are made and given to us by these industrious workers. The keeping of bees is one of the most profitable investments that our people can make of their money. The profits arising on the sale of surplus honey average from fifty to two hundred per cent. on the capital invested.

Bees consume large quantities of water when building comb and raising brood. Want of water is one of the causes of dysentery among bees. Knowing the great importance of water for bees, we again call attention to it. A bucket, tin pail or trough filled with water, with a few pieces of old combs or sticks for floats, for the bees to alight upon and drink in safety, should be kept near the hives, unless some stream of water is near.

Look often to your colonies; and if any weak ones are discovered, feed them up. They can be made as strong as any by another spring, but will be worth comparatively nothing if left to themselves.

Notice

Subscribers are requested to read carefully Notices to Subscribers on first page of reading matter; also see the inducement to gain money or its equivalent in the Prize List in this number.

Stock and Dairy.

Color of Shorthorns.

In some breeds of cattle the color is invariably fixed—as much so as any other characteristic. This is the case with the Galloways and Norfolks, but with the Shorthorns it is quite different, and their color seems to vary somewhat as fashion requires. It is as true of horned stock as of horses that a really good animal cannot be of a bad color; but it is equally true that the color has very much to do in determining the price. It has been held that the richness of the milk is indicated by the color of the cow, and the general testimony to this effect, based as it is on experience, cannot be gainsayed, though we know the milk of Shorthorns may be very rich even when the color is white. And a white steer or heifer does not fall behind one of any other color in early fattening or in the quality of the beef when fattened. However, they who purchase Shorthorns at fancy prices are not influenced by their milking or fattening qualities. Those points that indicate the best qualities they must have, but the purchasers require something more. They must also be of the fashionable color if they are to bring the highest prices. On this subject, "The Color of Shorthorns," Dr. Hickman, President of the Derbyshire Agricultural Society, read at their meeting the following remarks:

Color is at times uncertain in the offspring of the Shorthorn, because no one color has ever been sought for continuously for a long period of time. White, or red and white, is, perhaps, the primitive color of this tribe, but fashion in 1815 demanded white, and subsequently red, and now for the past fifteen or twenty years roan has been in request—this very color requiring a blending of red and white to produce it. A white bull and a red cow will produce a number of roans, in the first instance, but the progeny will produce red or white, or patchy mixtures of the two, according as either parent may have left the stronger bias in this particular. It is because of this variation in color that the admirers of the Hereford or Devon tribe of cattle taunt the Shorthorn as being not only a *parvenu*, but an artificial product—a made animal, with a constant disposition to run off to some one or other individual type of which it is a compound.

Now, notwithstanding that there is a race with the "alloy" of the Galloway in its blood, yet is the original Shorthorn as distinct a tribe as any other of our races, and has, probably, an ancestry as remote; and I am as positive as I am of my own existence, that a uniformity of color, as unvaried as any other class of animals, could be secured in process of time if breeders were unanimous in determining upon one of three colors, namely, red and white, white, or red. So long as roan, which is a compound color, is determined upon, so long will it be a matter of the greatest possible uncertainty what the actual color of the progeny may be. Certainly roan is a very beautiful color, and the variety which leads to make a herd of Shorthorns a most picturesque object in the parks or meadows of a nobleman; but still, this variety detracts from its dignity as a tribe, and lessens its effect when viewed as a herd in the stalls or grouped for sale in the market. I say that this uniformity may be effected, because, even now, there is a kind of unity amid all this variety, for, if we cannot determine what the color of the future calf will be, we can, at all events, predict what it will not be; we know that it will not be entirely black, or have any patch of that color—black—or anything approaching black, which would taint the fair fame of the Shorthorn as assuredly as would a woolly scalp, a flat nose, a protuberant lip, and a dark skin in her progeny, sully the honor of a Virginian lady.

Perhaps there have been more good Shorthorns of a white than of any other color; although it is now very unpopular—unpopular because it betrays dirt and is difficult to keep unsullied; and erroneously unpopular as implying weakness of constitution. It is as hardy as any color. Stick to facts and not to fancies. In what color does nature robe the animals which spend their lives amid the regions of eternal snow? What is the predom-

inant color in the Arctic hare, the Esquimaux dog, and the Polar bear? Of what color are the body-ends of nearly all feathers, especially the feathers of all water-fowl occupying cold latitudes?

Again and again have I known a white boar produce all white pigs from a black sow, and *vice versa*; but let it be ever remembered that for such results to follow, the bias, or hereditary transmission of the special color, must be equal on both sides. A white boar, *e. g.*, descended from a black sow by a white boar, when placed with a black sow, would not make so decided an impression upon the color as one which had for many generations descended from a white strain.

Size and Weight of Horses for Breeding.

It is always advisable to select horses for breeding that are a little above the average size, for it has been observed that the offspring are frequently smaller than the parents.

This is the case especially: 1, when the young colts, as it very unfortunately seems to be the rule in the west, receive rather poor care and insufficient food and protection during the first two winters; 2, in years in which the food has been spoiled or made scarce by unfavorable conditions, such as a very wet season, a long-lasting drought, or an extremely cold winter; 3, when the growth of the young animal is retarded by disease.

Further, where common, native horses have been improved by an importation of blood, that is, by a use of thoroughbred or blooded stallions, we find, almost always, comparatively more small and fine animals than large and robust ones.

Besides all this, the demand for large and heavy horses, that are also good in other respects, is constantly increasing, and is always much greater than for small animals. Therefore a breeder will generally do well, and will find to his account, to select as horses for breeding (both mares and stallions) none that are of inferior size and weight, provided, of course, the climate, the physical condition of the country, and the quality of the soil do not only permit, but are tending to promote symmetrical development of a big and heavy animal.

Where heavy horses, that are also otherwise well qualified in every respect, cannot be had, except at a great expense, smaller animals have to be chosen; but the breeder has to endeavor to increase gradually the size of his animals, by bestowing upon his brood mares and upon his colts the very best care, by feeding them liberally, especially with oats, and by giving them ample protection against the inclemencies of the weather. By doing this, he will succeed in raising considerably the average weight and strength of his horses, without sacrificing any other good quality already possessed, which latter is so often the case where size and weight are the exclusive aim of the breeders.

It is true this method is a slow one; it will take several generations to make the difference in size very conspicuous, but it has the advantage of requiring only a comparatively small capital to begin with.

The thoroughbred horse excels above all other breeds by the great elasticity, firmness, and compactness of its fibres, by its noble form of body, by the perfect development of its organs of circulation and respiration, and by a very small size of all minor and comparatively unimportant parts. The common horse possesses much less elasticity, firmness and compactness of fibre, has a less elegant and pleasing form of body, and less developed organs of circulation and respiration, but is generally heavier, and to a certain extent makes up in size and weight what it is lacking in intrinsic power and activity; it is therefore better qualified for slow and heavy draught, while the thoroughbred is much better fitted for speed and for travelling over long distances.

Hence, where the superior qualities of both, of the thoroughbred and of the common horse, are harmoniously united in one and the same animal, where, in other words, blood and size, or intrinsic power and weight, are combined, we have a horse that may be called excellent and will answer every reasonable demand. To effect such a harmonious union must be one of the principal objects of the breeder. It is best accomplished by selecting, first, a large and heavy common mare, with good mechanical proportions, to be served by as large a half-bred horse, with good mechanical proportions, as can be found, and by matching the offspring, if a mare, with a thoroughbred horse. That favorable results cannot be obtained without proper care, liberal feeding, and sufficient shelter, does not need any explanation.—*Chicago Tribune.*

Value of Shorthorns.

The prices realized of late at Shorthorn Auctions appear, in comparison with those which have astonished us this summer, to be almost failures. An average of 40l. no longer satisfies. The sales of the last few weeks seem no higher than they used to be 10 or 15 years ago. Mr. Wortley, for example, has done in 1875 no better than Mr. Langston did in 1864. But, even so, this does not mean stagnation. On the contrary, it indicates a great advance; for the Sarsden herd, whether better bred or not, was certainly more noteworthy at its date—was better known, and had a higher general reputation among Shorthorn herds than any of those which have been lately sold. And if we go but little further back, the difference is still more striking. The late Lord Ducie was content, at his annual sale of bulls and bull calves, with prices of 10l., 15l. and 20l. a piece; many of them being of strains which now command a fancy price. Such animals would now be worth many times the sum which they then realized; and even where no special or "fancy" strain existed, the old Tortworth prices certainly would not now be satisfactory.

The value of a thoroughbred Shorthorn has risen since then, and two leading explanations may be given of that fact. Thus (1), the price of meat has risen; and (2) the so-called purity of breed is so many generations older; and the power of a male to transmit his character to his posterity grows in certainty, and, therefore, in value, with the length of a good pedigree. If, instead of value, we speak of price, then to these two main sources of the rising value of the Shorthorn we must add the fact that, in consequence of the above-named causes, a much larger number of breeders are now buying Shorthorn bulls.

It may seem a great descent from the lofty 1000-guinea bids of the past season for Duchess bulls and Warlabby cows, to speak of the price of meat; and, in truth, there seems at first but slight relationship between the two. Nevertheless, on the price of meat and the economical value of the Shorthorn as a meat-maker the whole subject hinges. If these Shorthorn prices cannot find a justification somehow in the meat market, they will find it nowhere. Of course when we speak of meat, we include the whole food production of the animal. The milk produce also is included in the relation of the breed to the consumer, on which exclusively, then, as now, we have built the whole justification of the price of Shorthorns.

There is no other justification possible. It is the economy with which the plant growth of the farm can be converted into animal food by this, that, or the other strain or family or breed of cattle, which alone can answer the question—Which of good cattle shall we cultivate? And how meat at 8s. a pound, and milk at 10d. a gallon, can justify even a 40l. or 50l. average for a beast which may weigh 8cwt. of beef or produce 600 gallons annually of milk, is the question to be answered. It can be answered without difficulty. These cattle are sold not to the consumer, but to the breeder. A pure-bred Shorthorn cow is never sold until she has ceased to breed, and a pure-bred Shorthorn bull, if he be of decent merit individually, never ought to be. In neither case has the ultimate carcass value of the animal any share whatever in determining price.

It is, in fact, through the Shorthorn bull that the food producer and the food consumer are interested in Shorthorn breeding. It is the demand for bulls that is the true barometer which indicates the prospects of the Shorthorn breeder. Paternity by a well-bred Shorthorn bull means 3l. or 4l. instead of 30s. as the value of the calf. It will, indeed, answer the purpose of the grazier or cow-keeper to pay much more than this for calves or yearlings got by well-bred bulls than for calves or yearlings got by the mongrel brutes one often sees on dairy farms. It may be a most prudent purchase on the part of the owner of a herd of good ordinary cows to pay 50l., 60l. or even 70l. for a well-bred Shorthorn bull; and, as long as a demand continues for sires to be used on the rank and file of the cow stock of the country, it may be profitable for the breeder of pure Shorthorns to give even extraordinary prices for the maintenance of his herd. His clients are so large a body that it will be a long time before his market is overstocked. There are two and a quarter millions of cows coming to the pail every year in Great Britain only, and as the superiority of the Shorthorn breed becomes acknowledged, prices will no doubt, still advance.

We are not speaking now of 1000 guinea bids. Let those who choose enter the lists in their defence. No doubt the value of the live stock of

whole provin enormously is to. Shorthorn pounds annu advantage w realises from defence of 40 on such a fac the economy lationship to horns. The we have said and (2) on i second of th fined to part the first.

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whole provinces—say in Ireland, for example—has enormously increased within living memory, owing to Shorthorn crosses, and many thousands of pounds annually would not represent a tithe of the advantage which that one district by itself now realizes from the use of well-bred bulls; but any defence of 4000 gs. for a single bull which is based on such a fact as that, overlooks the certainty that the economy of meat-making does not hinge on relationship to any single family or strain of Short-horns. The power of a well-bred bull depends, as we have said—(1) on its length of good pedigree, and (2) on its individual energy and merit. The second of these considerations certainly is not confined to particular names or strains, and neither is the first.

We do not suppose, however, that these high prices have been thrown away; the courageous men who have been the purchasers will be well paid for their pluck. The fashion will last their time. The ring may even widen, and embrace other favorites and strains; but, like many another fancy, its extravagance is artificial. "It is magnificent," no doubt, "but it is not agriculture."—*Agr. Gazette, Oct. 9th.*

Sprouted Grain as Food for Farm Stock.

The manufacture of grain for cattle by the process of sprouting, or germination, would be simple and easy were a malthouse accessible, but when the grain is required to be prepared upon ordinary farm premises, contrivance must step in and fill the void, and it will be my endeavor in this essay to eliminate the inconveniences attending the present various methods of sprouting, and lay before the manufacturer a practical method whereby the system of germinating may be made equally simple and easy.

That the inconveniences may be seen, it is necessary to detail the common modes of germinating.

1st. A few bushels of wheat or barley are put in a tub and steeped 48 hours in cold water, the water is drained off and the grain left to sprout in the same tub, and whilst yet in an unfit condition it is used until all is used up. The defect in this system is that more should not be put in steep at one time than is sufficient for four or five days' consumption, as the grain will not keep, and the time required for winter being 12 to 16 days, and summer germination 7 to 9 days, consequently, in the interim of a fresh supply, the animals must feed on raw food. A change so extreme is incompatible with health to ox, sheep or horse.

Other stock masters steep the grain 48 hours, drain off the water, remove the grain from the tub and place it in a heap upon a board, brick, or asphaltic floor, and turn it every day. A second lot of grain is steeped and treated in a similar manner, and a third, one lot coming after another, so a supply of grain at a proper stage of germination is kept up.

By this method there is great confusion in working the grain upon the floor; the different steepings unavoidably get mixed, and consequently some of the grain is used before arriving at the proper stage of germination.

Horse keepers (especially Norfolk men, who place a high value upon the feeding properties of sprouted grain for horses) place a bushel or two of wheat or barley in a sack, throw it into a pond or ditch, and at the end of 48 hours remove and bury it in chaff in the sack, and shake it once a day until it is fit for use; a second lot is treated like the first, and a third, so providing a continual supply.

The germinating process is influenced by temperature, and different effects are produced upon the various kinds of grain under precisely similar influences. Whilst barley at the temperature of 40 deg. F., or any lower degree, requires turning once only in 24 hours, it is necessary to turn wheat twice within the same period. In summer either is manufactured in seven days; in winter 12, 16, and, if the grain has been harvested in seasons like 1864-5-8, as much as 20 days are required for the grain to arrive at a proper stage of germination. Wheat or barley requires steeping 48 hours, and will germinate favorably when not mixed together, whereas maize requires steeping four days and four nights, and will germinate only in combination with wheat or barley.

Whilst the use of sprouted grain was limited to feeding a few horses or pigs occasionally, the inconveniences belonging to the ordinary way of manufacture were not of much importance; but when its value as food for sheep and lambs became

known, with its rapidly increasing consumption, it became necessary to adopt improved methods of manufacture.

By a most simple method grain can be germinated equally valuable for feeding purposes to that which has been prepared in a malthouse. A herdsman or other farm laborer instructed in the system, can, in an ordinary farm out-house, 12 feet square, with close walls, board, brick or asphaltic floor, and suitable utensils—steeping tub, draining, heating and germinating boxes—prepare, by the labor of one hour daily, sufficient sprouted grain to give a pint each daily to 256 sheep, or half peck each to 32 horses, or the same quantity each to 32 oxen; or, in a house 18 feet by 13 feet, so as to give space large enough to contain steeping tub, draining, and heating boxes, each 5 feet by 3 feet 20 inches deep, a tier of germinating boxes in addition, same size as floor boxes, supported on trestles or other wood work, about 4 feet, and immediately above the floor boxes sufficient grain can be sprouted to feed 250 sheep, 20 horses, 20 oxen, and 50 pigs, allowing pigs and sheep 1 pint, horses and oxen 1 peck daily.

By the box system of sprouting space is economized, the same depth of grain can be had at the sides as at the middle of the beds, grain of the different steepings is prevented getting mixed, and none can get to the feeding troughs insufficiently germinated.—*Eng. Agricultural Gazette.*

Sheep—their Breeds.

The Leicesters are usually placed at the head of the long wool breeds, as being the finest in form and fleece, and also because it has been largely used in crossing, for the improvement of the other varieties.

The head is hornless, and rather long and narrow; ears thin, with spots of bluish tinge. The long, well cut ear of the pure Leicester, with its sprightly backward inclination, is a distinguishing characteristic of the breed, as is also the full, prominent eye, with quiet and lively expression. The face and forehead must be bare of wool, though covered with a fine coat of hair—white, with a little inclination to the bluish tint.

The body is straight; with ribs well sprung and barrel shaped; the pelt inclined to be thin; the wool exceedingly soft, fine and lustrous, and should be uniform over the carcass.

The extremities—muzzle and legs—are exceedingly fine, but the quarters are full and wide, with back broad and level. Indeed, the carcass of the true Leicester sheep is as near perfection in form as can be conceived possible.

The Cotswold, though of late years modified by the crosses of the Leicester blood, and, therefore, strongly resembling that breed, is somewhat coarser and longer in carcass; with a heavier fleece, which should be as lustrous, though not so fine as the Leicester. The head is larger, and must have a tuft of wool on the forehead, which the Leicester never has.

The Lincoln is as large as the Cotswold, though in other respects, as now bred, very strongly resembling the Leicester. The head is long, the face narrow and bare of wool, with white, fine hair and light bluish tint as in the Leicester. They stand rather higher on the leg than the two varieties before mentioned, and the carcass is apt to be less symmetrical; but the fleece is longer and heavier, and, though not quite so fine as the Leicester, is unsurpassed in lustre, and therefore commands the best prices in the markets.

It is difficult to describe animals so as to enable a person to determine the pure bred from the mongrel; indeed, the best judges are not always able to detect the presence of a slight dash of inferior blood.

One thing the producer may rely upon—that long-wool sheep peddled about the country at low prices are never pure-bred. Indeed, blooded stock of all sorts should be purchased of parties that are known as reputable breeders—this is the only reliable security the purchaser can have that the animal purchased will turn out what it is represented to be.

The Southdown sheep has a broad, rather short, though exceedingly neat, head; forehead covered with wool, and the face and legs with grey or brown hair. The fleece is rather short, of good felting quality, equal to half-blood Merino, but superior for flannel, &c., and should be solid and compact, and of uniform quality throughout, without projecting hairs.

The carcass should be straight, with well sprung ribs and broad, level back, having wide quarters, deep flank and well-packed twist. This being held in higher esteem than any other breed for the production of superior mutton, the full and perfect development of carcass is deemed of the highest importance.

The Hampshire Downs are coarser in form and fleece, with black faces and legs.

The Shropshire Downs are a cross between the Southdowns and long-wools—a large breed, with long, coarse wool, in form resembling the Cotswold, with black faces and legs.

In regard to this matter of the color of the faces and the legs, it is remarkable that while the Southdowns, which stand at the head of all these varieties, have, as before observed, brown or gray colors in these parts, their crosses on other breeds will frequently show black faces and legs.

When the object is to keep a small flock for mutton, rams of this variety are found exceedingly profitable to cross on ewes of almost any other breed. But the nearer they go to the pure blood the better the mutton.—*Live Stock Journal.*

Keeping Firkin Butter.

The dairy product of butter, outside of the districts of the county around our cities and large towns available for daily marketing, must necessarily be put up, or packed in tubs made of white oak, holding 25, 50 or 100 pounds weight. The packages are known in the market as the tubs or firkins. The value of this butter depends upon the care taken to free it from the buttermilk, and the knowledge and taste required to flavor it by the proper use of salt, and the neatness with which the whole process of making is characterized.

The consumers are obliged to pay from twenty to forty cents per pound more for butter brought to their cities and large towns weekly than the average market price in our country-made and packed butter—this, too, when its intrinsic value is no more.

This is owing entirely to the want of proper knowledge of the mode of preservation after it comes into possession of the family by whom it is used. The country-made and packed butter is kept in the dairy cellar or spring house from the date of making until sent to market, retaining all the qualities as when first made.

This is done by excluding the air by the simple process of keeping the package covered with brine made of pure salt, strong enough to float an egg. When sold, and as soon as it is to be delivered, the brine is to be drained off entirely by reversing the package and leaving it bottom up for twelve or twenty-four hours. It is then headed up, and goes to market without brine. The consumer is interested in getting possession of his supply as soon after it leaves the dairy cellar as possible.

He should first take out the head, driving the hoops back to their place, and then make a brine of pure water and Ashton salt, and covering the butter with it, and keep it covered until the last pound is used. The butter kept just covered is easily cut out the size required for use, and if then held under the hydrant or pitcher, and water poured over it freely, it will prove as good as the first.

No fear will be entertained that the brine will impart its taste to the butter. The office it performs is to prevent the air from contact with the butter. The writer knows that firkin butter has been kept a year by this simple and inexpensive process as sweet and with all the flavor it possessed the day it was made and packed.—*P. E. Piollet, in Country Gentleman.*

Meat Product Per Acre.

Mr. J. J. Mechi, one of the leading scientific farmers of England, considers meat-making one of the main points of his agricultural success. He regards it as an essential part in good farming, to make meat and manure in summer as well as in winter. This, however, cannot be done without shelter for animals, combined with good ventilation to protect them from flies and other insects; with proper provision for this necessity, he has succeeded in putting on both growth and fat in summer time. He acknowledges that there is no profit in feeding stock at market prices, but where a farmer has sufficient capital and knows how to use it, he will find stock-feeding profitable on account of its sure product of the best and cheapest manure he can obtain. Mr. Mechi finds his mar-

gin of profit in the very large grain, root, and green crops which he is thus able to raise at a cost below market prices. He gives the following balance-sheet of his live stock operations for 1874 on his farm of 175 acres at Tiptree:—

January 1, 1874:—	
Value of live stock, including poultry.....	£737 19 0
Corn and hay, the produce of the farm, consumed during the year, estimated at market prices.....	177 5 0
Corn, oil-cake, malt, culms, bran, etc., purchased.....	431 5 3
Grinding corn, medicines, veterinary, etc.....	21 0 0
Live stock purchased during the year.....	239 8 6
Green and root crops of 25 acres raised and consumed.....	88 6 2
Total.....	£1,095 3 11

January 1, 1875:—	
Value of Live stock, including poultry.....	£926 2 0
Fat meat sold.....	691 10 2
Wool sold.....	43 14 10
Poultry sold.....	33 7 11
Total.....	£1,695 3 11

The increase in the value of live stock and poultry at the end of the year was £188 3s., or £51 5s. 6d. less than the amount paid for new animals during the year. This deficit shows the extent to which the whole live stock value, old and new, was reduced, and must be deducted from the aggregate sales to show the net meat product of the year. This will leave £684 8s. 6d., which, at 9d. per

me out. The vast majority of our cattle are badly bred, and anyone who introduces a good pedigree Shorthorn bull into a parish is a public benefactor. But you would naturally infer that as stores are dear the breeder is getting fat, and we farmers should keep cows and rear young stock. I believe it is not found to answer in Norfolk. We have not the old pastures, the proper cows, or sufficient accommodation in our agricultural buildings for the purpose. We can generally in the autumn buy Irish bullocks cheaper than we can bring them up, but the serious part of the business is that the foot-and-mouth disease is a most fatal complaint amongst young stock and dairy animals. From this cause the numerous class of small farmers and cottagers who keep a cow or two and rear the calves are gradually giving it up. Although butter is just 2s. per pint all the year round, the losses are so great from disease, which under our present system visits them once or twice a year, that it does not pay. A fresh cow takes the disease, loses her milk, perhaps part of her udder, becomes a bag of bones, and almost a total loss to her owner. Many poor people are ruined by this process. The public lose the supply of butter, cheese and milk—even the poor pig is starved—and the farmer lacks the "home-bred" to graze.

After all, it is a consumer's question as well as a farmer's, but how about the dealers? Well, they

foot-and-mouth disease will ruin half his class, and will perhaps tell you he has 4,000 sheep down, from which he is weekly supplying the market with stock and infection at the same time, and there is no law to prevent him.

This is a true picture and an every-day one. More stupid, senseless laws never disgraced a country than those which now exist and should regulate the movement of cattle in our country.

I am convinced there is no more occasion for us to suffer with this scourge than there is for us always to have cattle plague. We have only to set about to stamp it out and stop it out, and we should hear as little of it as we do of cattle plague.—*J. B., in Norfolk Chronicle, Eng.*

The Prize Cotswolds.

The importation into our country of choice seeds, superior implements, stock, &c., is what every well-wisher of this Dominion should encourage, for it is upon the excellence of its productions that our prosperity as a nation must depend. All efforts in this direction will receive our hearty support.

We take pleasure in introducing to our readers this prize flock of Cotswolds, from a drawing by our special artist, and engraved for the Advocate by a Canadian xylographer. They are the property of Mr. W. Hodgson, Myrtle, Ont. His shear-



PROVINCIAL EXHIBITION PRIZE COTSWOLDS.

pound, gives an average of 134 pounds of meat per acre, worth £3 18s. The total cost of feed, including produce raised on the farm and purchased from without, amount to £717 16s. 5d., from which deducting the wool sold, £43 14s. 10c., there remains £674 1s. 7d., or £3 16s. 4d. per acre as the actual cost of production, leaving a margin of only 1s. 7d. per acre to pay for labor and attendance, which is estimated at £100 in the aggregate of 11s. 5d. per acre. Mr. Mechi's profit, then, must have been in the raising of his home crops, and in the fertilizing elements added to his land by his abundant product of manure.—*Live Stock Journal.*

Why are Meat and Butter Scarce?

If I were asked why meat is so dear, I should reply—Because it is an expensive article in this country to produce, and there is great demand for it. Why is it so expensive to produce? Because store cattle are very dear to begin with, and after you have bought them they take the foot-and-mouth disease, and you have to keep them eight or ten weeks before they recover from the effects of their illness and journey; occasionally you lose one, and very often out of a lot of 20 you get two or three wretches that will not graze; so altogether, from sickness, ill-bred stock and expensive artificial food, the grazer does not get very fat, however fat he may make his oxen. So far, I believe all who are acquainted with the business will bear

often have to make great sacrifices, and run the risk of fines to sell their beasts before they come down. Their premises are infected, their market is infected, their railway cattle trucks are filthy; they pick out their cattle that do not show visible signs of disease, and mix them up with their fresh purchases, knock them together at market, according to age and size, and so spread the foot-and-mouth disease beautifully; and there is no law against this. To recoup themselves for occasional heavy losses they must sometimes make great profits, or the business would not pay; this comes out of the grazer's pocket, and prevents his being a paying game. You see a lot of long-legged, bony creatures, walking like a cat upon a hot hearth, shaking their cracked heels, their hair upright, their backbones sticking up, their bellies empty. You ask the dealer where they come from, and he will tell you they are just over the disease, have been lying on the meadows near the market, and could not be moved for three weeks; he will sell you them at a bargain, £3 a piece less than he was bid for them three weeks previously, and they have been costing him 10s. per head per week for hay and attendance. Perhaps you are foolish enough to buy them, as there is such a lot of money, but you will find they are not cheap, they will give all your home cattle the disease, and they are not over it themselves. Many of them never do get over it; two or three take lung disease, and you get half your loss out of the poor's rate for compulsory slaughter. The dealer will swear the

ling ram "Champion" obtained first prizes at the Provincial Exhibition, Ottawa; Ontario County Fair, and Central Fair, Toronto, this year. "Champion" was bred by Mr. Toms, Gloucestershire, England; he weighs 337 lbs., fleeces, 21 lbs. His shearing ewes were the winners of royal honors at Taunton, England; they also took first prizes at the above-named Canadian fairs. The ewes were bred by Mrs. Mary Golwin, England, and imported direct.

Mr. Hodgson has made further acquisitions to his flocks recently from those of the well-known breeders, Messrs. Cole and Walker, England. He is striving to have the best stock in Canada; but others are aiming at this mark also, and the friendly rivalry existing between them will no doubt prove beneficial to our stock. We wish them success, for the expense and risk of importing is very great, and may they go on and prosper until they have made Canadian stock second to none in the world. Farmers, help on this good work by procuring the best stock, which is the cheapest, and thus lay the foundation of one of the chief sources through which the wealth and greatness of this country must in the future depend.

The other day Mr. Brydone, for the New Zealand Land Company, purchased three very promising shorthorn heifers from the Duke of Richmond, after Royal Hope, and bred in His Grace's fine herd at Gordon Castle, Fochabers, for export to New Zealand.—*N. British Agriculturist.*

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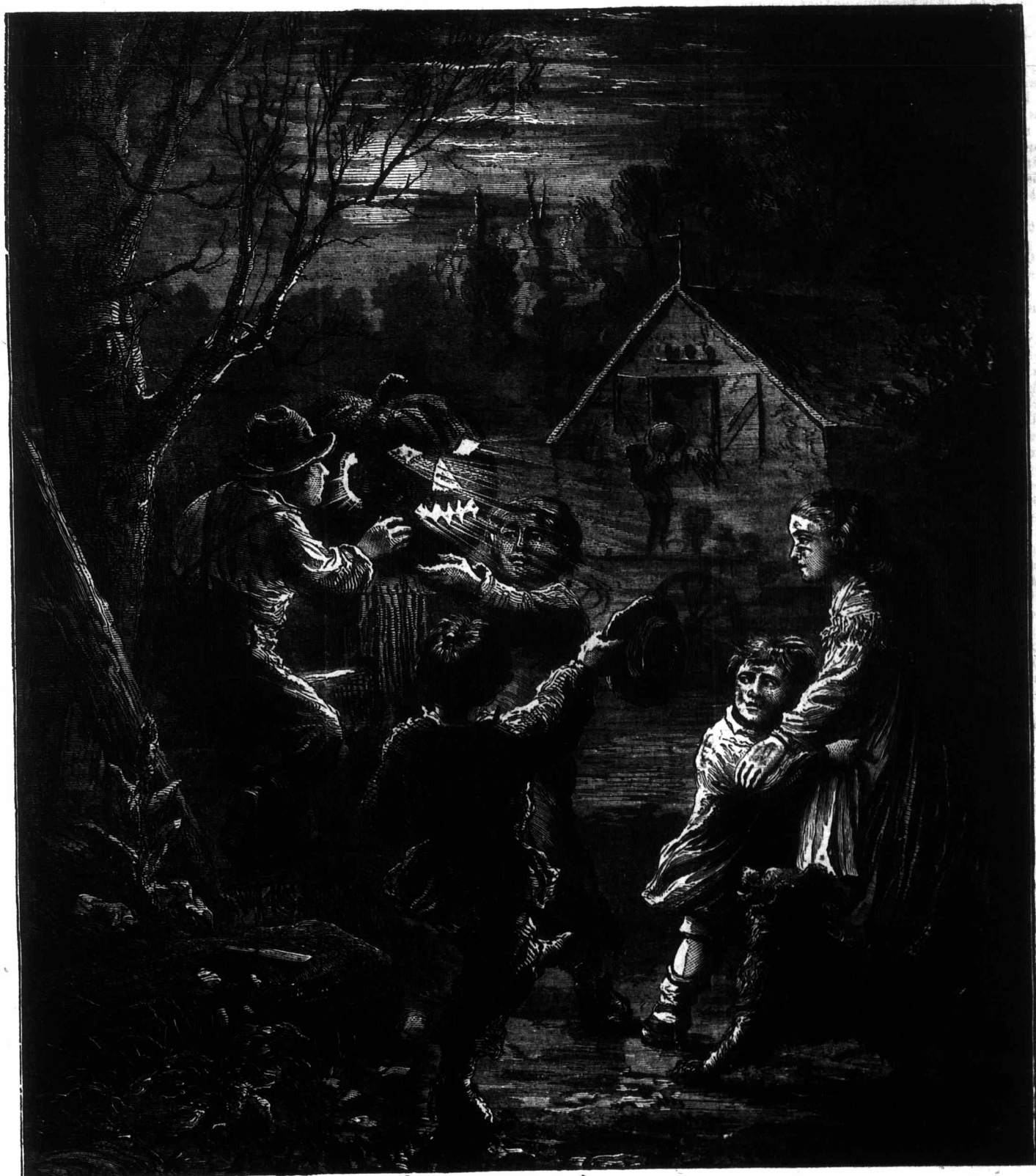
What a Good Crop Does.

The benefit to the consumers in this country of a good harvest, can now be definitely stated by the realized result of that of 1875. This is the only country in which foreign corn can always meet with a market, and in a year such as the past, the abundance of all foreign countries found this the only outlet. The weight of foreign corn of every kind imported during the last two harvest years has varied extremely little, being in round

Our Engraving.

Christmas is the time when young people have leisure hours for amusement, and our engraving will teach the young idea how pumpkins may be made to serve this purpose. No doubt the young folks will be making a raid on those stowed away in root houses, barns and cellars, and lots of fun will be the result. We might state, for the information of the timid ones, that capturing pumpkins

horses, swine, working and fattening cattle, and poultry, and carefully noted the result, which was in all cases very remunerative; so much so that even with defective, inconvenient and expensive apparatus used—for want of better—in steaming, manipulating and feeding. I found there was an average profit of at least 25 per cent., that is, in feeding the variety of animals named; but in feeding milch cows in cold weather with warmed steamed food of every description there was a profit of over



CHRISTMAS FRONES—How illuminated Pumpkins may be made to do duty.

numbers 4,500,000 tons and 4,600,000 tons respectively. The cost of this in 1873-4 was £51,000,000, and in 1874-5, £45,000,000; the larger supply of the past year thus costing about £9,000,000 less than the somewhat smaller import of the previous year. To this difference must be added a considerable saving both in the quantity and price of foreign potatoes imported. When we add the saving in the cost of the home supply of corn, the total gain to the British consumers from the fine harvest of 1874 can not have been less than £20,000,000.—London Times.

at this season is not a criminal offence, but perfectly justifiable. When used as exhibited here, they will be the means of scaring the young folks, amusing the older, and remind the oldest of the time when they went and did likewise. For its many good qualities see last Jan. ADVOCATE, p. 15.

COOKED FOOD FOR CATTLE.—Professor Wilkinson, of Baltimore, says:—"I conducted an agricultural school and experimental farm for eight years, and experimented with feeding cooked and uncooked food of every description used for cows,

30 per cent., when the animals were kept at proper temperature, and fed with proper proportions of nutritious food.

IOWA CORN FOR 1874.—The corn crop of Iowa for 1874 was 120,000,000 bushels, worth \$60,000,000. This is more than the estimated value of the entire corn crop of the United States in 1840. Of this amount but 5,577,318 bushels were shipped out of the State, which means that her sagacious farmers turned it into beef and pork. This accounts, in a measure, for the fine herds.

Agricultural.

Farm Drainage.

O. Foster, in Utica Herald.)

That there is at some periods of the year, on a large per cent. of the lands of this country, a large surplus of water, is undisputed. Why it is that farmers are so slow to see the advantages to be derived from a system of drainage, is almost beyond comprehension. It is presumable that farmers, like men in other pursuits, would be ready to adopt any honorable means to benefit their financial condition. But when the subject of drainage is introduced, the objection is raised at once that it is too expensive. Most farmers will admit that their lands have too much moisture. Now the probabilities are, that we do not, as a rule, have too much rain fall, but we fail to prepare our lands to be benefited by its fall. French, in his work on farm drainage, says:—"Rain is the principal source of moisture, and a surplus of moisture is the evil against which we contend in draining. But rain is also a source of fertility, not only because it affords the necessary moisture to dissolve the elements of fertility already in the soil, but because it contains in itself, or brings with it from the atmosphere, valuable fertilizing substances. Rain water always contains, in solution, air, carbonic acid and ammonia. The two first ingredients are among the most powerful disintegrators of the soil. The oxygen of the air and the carbonic acid, being both in a highly condensed form, by being dissolved, possess powerful affinities for the ingredients of the soil. The oxygen attacks and oxidizes the iron; the carbonic acid seizing the lime and potash, the other alkaline ingredients of the soil produces a further disintegration, and renders available the locked up ingredients of this magazine of nutriment. Before these can be used by plants, they must be rendered soluble, and this is only affected by the free and renewed access of rain and air. The ready passage of both of these, therefore, enables the soil to yield up its concealed nutriment." Now, if these premises are correct, you will readily see the necessity of underdraining; for open ditches or surface draining will not accomplish the object sought. I am aware that many farmers insist that open ditches are sufficient to drain their lands. Let us examine this surface draining and see if it is sufficient to relieve the land from the surplus water, or to be benefited by the falling rains. I take the position that open ditches will not drain lands unless it be a very loose, mucky soil; nor that only for a limited time. For, in my experience and observation, I have seen very often, as I doubt not many of you have, water standing near the banks of an open ditch, and a foot or more above its bottom, day after day, with but very little diminution in quality; an evidence that that ditch was not draining that field. A few years since a neighbor of mine had a flat piece of land through which there was an open ditch, and the water lay along each side of it nearly as much as though there had been no ditch there, and he could not succeed in getting a fair crop of anything. I advised him to deepen his ditch and put in drain tile and the difficulty would be removed. He seemed quite skeptical at first, but finally put in the tile, after which he was wonderfully surprised at the effect a single under-drain had on that piece of land, the water all disappearing for quite a distance on either side of the drain. Again, a townsman of mine, owning a very excellent farm near a village, and on which there was, by the side of the highway, a low, wet piece of ground that marred the good looks of the farm considerably, and seemed to annoy the owner very much. I advised him to under-drain it. He thought that it could not be drained; for, said he, the land will hold water as well as an iron kettle. I said, in reply, that if he would spend one day in digging, he could ascertain very nearly whether under-drains would draw the water. As he was very anxious to improve that particular spot, he concluded to make the experiment. He employed a man or two, and, on the morning of the second day, to his great surprise and gratification, the water in the vicinity of the ditch had all disappeared. I might say more about this case, but it is not necessary for my present purpose. I relate these circumstances as evidence that open ditches will not drain lands—that under-drains will. Water running off on the surface tends to impoverish the soil, by taking with it much that should become food for plants, and is not enriched by the falling rains. Again, open ditches must be re-made or repaired every year or two, in order to maintain a water course. They are a great inconvenience in doing the work in fields or

where they exist. Upon a crop of Indian corn, the cold water lurking below soon places its unmistakable mark. The blade comes up yellow and feeble. It takes courage in a few days of bright sunshine in June, and tries to look hopeful, but a shower or an east wind checks it. It had already more trouble than it could bear, and turns pale again. Tropical July and August induce it to throw up a feeble stalk, and to attempt to spindle and silk like other corn. It goes through all the forms of vegetation, and yields at last a single nubbin for the pig. Indian corn must have land that is dry in summer, or it can not repay the labor of cultivation. Careful attention to the subject will soon teach any farmer what parts of his land are injured by too much water, and, having determined that, the next question should be whether the improvement of it by drainage will justify the cost of the operation. The advantages of under-drains are quite numerous, and it would be too much for an evening's discussion to enumerate and illustrate all of them. But we will endeavor briefly to give a few that seem most prominent. First, then, they relieve the soil of the surplus water, being perpetual workers, summer and winter, if there is anything in their line to do. In the spring, when the snows begin to melt, the water finds its way to the drains, and is passed off; so that our lands are much earlier in condition to work, and also to receive the seed. They insure a crop against excessive wet, as also against severe drouths. The question is often asked: Will it pay? French says "drainage is a permanent investment. It is not an operation like the application of manure, which we should expect to see returned in the form of saleable crops in one or two years, or ten at most, nor like the labor applied in cultivating an annual crop. The question is not whether drainage will pay in one or two years, but will it pay in the long run? Will it, when completed, return to the farmer a fair rate of interest for the money expended? Will it be more profitable, on the whole, than an investment in bank or railway shares, or the purchase of western lands? Let us bring out this idea clearly to the farmers of Central New York. Your field is worth to you now one hundred dollars an acre. Suppose, now, it cost one-third of a hundred dollars an acre to drain it, what must the increase of your crops be to make this a fair investment? Had you expended one third of a hundred dollars in labor, to produce a crop of cabbages, you ought to get your money all back, with a fair profit, the first year. Had you expended it in guano or other special manures, whose beneficial properties are exhausted in some two or three years, your expenditure should be returned within that period. But the improvement by drainage is permanent; it is done for all time to come. If, therefore, your drained land shall pay you a fair rate of interest on the cost of drainage, it is a good investment. Seven per cent. is the most common rate of interest, and if, therefore, each three acres of your drained land shall pay you an increased annual income of seven dollars, your money is fairly invested. This is at the rate of two dollars and thirty-three cents per acre. How much increase of crop will pay this amount? In the common rotation of Indian corn, potatoes, oats, wheat or barley, and grass, two or three bushels of corn, five or six bushels of potatoes, as many bushels of oats. A bushel or two of wheat, two or three of barley, will pay the bill. Who that has been kept back in his spring's work by the wetness of his land, or has been compelled to replant because his seed has rotted in the ground, or has experienced any of the troubles incident to cold, wet seasons, will not admit at once, that land which nature has not herself drained, will, in this view, pay for such improvement? By lowering the water line in the subsoil, the various crops take root much deeper, consequently making a much stronger and healthier growth, thereby increasing the quantity and improving the quality of the crop. Under-drains relieve the land from stagnant water that is so disgusting to the sight and are prolific sources of disease to the human family, as well as of putrid milk, so much complained of among dairymen. These same waters that become stagnant by standing on the surface of the land, by being filtered through the soil, and conveyed in an under-drain to a convenient point, afford an excellent privilege for watering stock. The other part of the subject that has been submitted for our consideration, viz.: the best and most economical method of constructing the drains, and material to use, I shall say but very little about. The majority of farmers who drain at all, have their own ideas as to what is best for them. In my own experience I have tried various methods for digging ditches, such as plowing out from one to two fur-

rows on top, and then using the spade and narrow scoop to complete the ditch. Have used a subsoil plow for loosening the earth; have used other devices with a view to save expense, but have come to the conclusion that if the work is to be done mainly by hand, the better way is to do the entire work by hand. The less the earth is disturbed in making ditches, the better the result. If hand labor is employed, and drain tile are to be used, I would suggest that suitable narrow tools be procured to make a narrow opening, thus taking out a comparative small quantity of earth, consequently having but little to return. As to the material to be used to construct a water course, there is but one that I recognize as durable, efficient and reliable, and that is hard burnt drain tile. If properly laid, and there are no trees growing near enough to send their roots into the joints of the tile, I know of no reason why the drain should not last for ages. I am aware that some farmers advocate the use of stone, for the two-fold purpose of making drains and, as they claim, disposing of their stone to advantage. In my experience I have found stone drains quite expensive and very unreliable. They are quite liable to become choked up by the washing in of sediment, or from the workings of mice. It will take from one to two loads of stone for each rod of ditch, while one or two loads of tile will lay from fifty to seventy-five rods, depending on the size of the tile. Then, again, it requires about three times the amount of excavation that is required for tile. Some have used boards, but as I know little or nothing of their utility, I will not speak of their comparative merits. I have said nothing in regard to the depth of drains, for the reason that soils differ so much. It would be difficult to fix upon any uniform depth that would be suitable for all soils and circumstances. I will say, however, that on my farm I have put tile down 30 inches; and that depth seems to be sufficient to dry my land, which is principally a sandy loam soil, with a mixture of clay and sand, or, in some cases, gravel subsoil.

The Island of Jersey—Crops and System of Farming.

Pasturage is the prime dependence of the Jersey farmers. In the valleys we find water meadows or irrigated fields, which yield one or two, sometimes three hay crops, and are always available for fall or late summer pasturage in case a drouth comes on, as is the case at this time. All other land which is capable of cultivation is available for pasture at different times in each rotation, and upon such land cows are almost invariably tethered. The system of cultivation is not peculiar as a whole, but I noticed some curious practices which may possibly be followed with profit. One is this: After an early potato crop, dug by the 1st to 20th of June, the ground having been thoroughly enriched for the potatoes, rye-grass, clover and turnips are sown together. By the 1st of August it is ready for feeding off, and the cows are tethered upon it, the turnips being pulled and fed in the manger at night after milking. These, it is claimed, impart no perceptible flavor to the milk and butter. It is quite likely no flavor is given to the butter, at least upon those farms where either the morning's milk alone or both the morning's and noon-day milkings are sold, and only the night's milk is saved for butter and for family use. A field seeded in this way, and when we saw it—three-quarters fed off—looked well set with both grass and clover, while the turnip crop on the portion not yet cleared was a very good one.

Lucerne is growing in favor, notwithstanding it imparts a disagreeable "green" flavor to the milk, and is not greatly relished by the cows. Young stock thrive upon it, and it is excellent for both soiling and hay.

JERSEY KALE.

There is a kind of cabbage grown chiefly for pig-feed, which is quite remarkable. We noticed on our first arrival that in many shops they offered or exposed for sale at the doors and windows singular looking canes, which, on close examination, I discovered to be very like cabbage stalks, and on enquiry, learned them to be such in fact. This kale grows to a really enormous height sometimes. That the stalks make good walking sticks is not surprising, when we know that the plants not unfrequently reach a height of 8 to 10 feet, and occasionally even 12 or 15. I have stood under those which were so high that I could not reach the lowest leaves. The seed is sown in the autumn, and the plants set out the same season in good soil, about 14 inches apart. They are fit for

use in the spring, and the leaves are stripped off for pigs and dry stock all summer long, only a moderate tuft being left at the top of each. They grow rapidly; the yield of fodder is large, while in point of nutritive value it is highly esteemed.

Roots occupy an important place in the agriculture of the Channel Islands, and it is hard to say which is most cultivated—parsnips, carrots, mangels, Swedes or turnips. Trenching is much practiced in preparing the soil for parsnips, but as it requires so much labor, and as this has of late to be better paid than formerly, the practice is falling somewhat into disuse and a less area of land is given to this crop. Ground that has once been trenched is of course free from stones, and may be worked cheaply and deeply with ordinary subsoil plows and deep tillage cultivators. When this is learned by the Jersey farmers, it may result in the raising again of more parsnips and carrots and less turnips.—*Cor. Country Gentleman.*

The Potato Crop.

The universally large crops of potatoes throughout the West, in the early part of the season, reduced prices in all the great centres of trade to such a degree that they were dull of sale even at nominal prices. It has already had the effect to cause such waste of the crop, that prices may next spring be fully adequate to warrant their shipment 200 or 300 miles. Of course early varieties, as Early Rose, will be unsaleable, but Peachblows will, we think, command fifty cents per bushel in Chicago.

The supply of early sorts, which only are raised in the vicinity of Chicago, and which until lately has fully supplied the demand, are so far exhausted as to command 40 cents per bushel now readily. The present heavy crop will pay a fair profit at 20 cents per bushel, thus leaving 20 cents for freight and commissions. They will probably go higher, and those farmers living out too distant should be prompt to take advantage of the rise, for early sorts are not sought in the spring, except during a dearth of late varieties. Certainly none should waste the late good varieties.

Whatever surplus there may be of early roots, they are worth saving for stock. For fattening hogs they are not available without cooking, and this but few feeders are prepared to do. When corn is plenty and cheap, as it is this year, it will not pay to cook potatoes for stock except perhaps as a change. But for all other farm stock, and for stock hogs, they are valuable fed raw in connection with dry food. Thus one-half bushel per day may be fed with profit to each milch cow, or fattening steer, and for sheep, especially ewes in milk, they are equally valuable.

As food for fowls of every kind, there is nothing better boiled and mixed with meal and fed wet. With a warm shelter and proper resting places, hens thus fed will lay during very cold weather. For fattening poultry they are also very valuable.

Thus there are a variety of ways in which this crop can be economically used. At all events the potato crop should not be wasted, especially marketable late varieties. They will be wanted before potatoes come again.—*W. Farm Journal.*

The Manurial Value of Leaves.

The following, republished by the *Country Gentleman*, from its columns of fifteen years back, is as good now as when it was first written:—

Leaf manure has long been held in high estimation by gardeners and floriculturists, as affording one of the best substances known as food for plants. Many, however, regard it as a purely vegetable substance, whereas it is rich in mineral matters, which have a direct and powerful tendency to improve the constitutional texture and character of any soil to which they may be applied. The alimentary substances which contribute to the maintenance and growth of vegetables are, for the most part, taken up in a state of solution by the roots. In this connection, all the mineral ingredients discovered in plants are introduced into the system—such, for instance, as silicic acid, lime, potassa, magnesia, alumina, &c. The sap, which is the medium of this transmission and assimilation, passes into the leaf, where the watery particles are thrown out by evaporation through the minute spiracles on the upper surface of the leaf, and the mineral matters retained and distributed through the plant, and in part through the vascular structure of the leaf itself.

To illustrate more fully the truth of the position assumed, we present the following analysis of the leaves of the pear tree, plucked in May, immediately after the falling of the blossoms:

Carbonic acid, 11,560; silicic acid, 1,750; phosphates, 25,000; lime, 4,715; magnesia, 4,500; potash, 18,950; soda, 15,190; sulphuric acid, chlorine and organic acid, not determined; total, 81,715.

By comparing the results of the analysis of the same tree made in the spring and fall, it will be found that the older the leaf is, the greater will be the amount of mineral matter contained in it. It will also be found that the foliage of trees contain more mineral matter than the solid wood of the trunk.

In the matured foliage of the elm (*Ulmus Americana*), upwards of 11 per cent. of earthy matter—ashes—may be found, while the solid wood contains less than 2 per cent.; the leaves of the willow more than 8 per cent., while the wood has only 0.44; those of the beech, 6.67, the wood only 0.25; those of the European oak, 4.06, the wood only 1.22; those of the pitch pine, 3.13, the wood only 0.27.

These facts demonstrate conclusively that the application of leaves as manure must be succeeded by advantageous results. Every leaf applied in this way restores to the soil something of which it has, in the process of vegetation, been deprived. In this way the mineral ingredients of the soil are forced through a certain routine, and a constant circulation or reciprocity of action, is kept up between the soil and the vegetable beings it supports and perfects.

Entering the sap in solution through the mouths or spangioles of the terminal rootlets, they circulate through the system, and are ultimately deposited in the substance of the leaf, which in due course of time falls to the earth, and by its decay, restores the more favorable for again traveling the circuit in which they are destined endlessly to revolve.

The soils of our forests, it is well known, never run out, or are so far depreciated as not to be able to supply abundant aliment to the gigantic vegetation they are found to support. The reason of this is obvious. They annually receive back the greatest portion of the mineral constituents of the trees, together with no inconsiderable quantity of organized matter, derived from the atmosphere.

Were the leaves to be removed every autumn from the forest lands, the same as grain, grass and root crops are removed from the arable soils, the impoverishment consequent upon such a course would be no less obvious in the one case than the other; they would "run out"—the vegetation would be weak and sickly, and to support it we should be under the necessity of applying, annually, large and increasing quantities of manure.

Leaves unquestionably afford a rich material for manure, and no farmer who has a wood lot in the vicinity of his farm should neglect to accumulate large quantities, to be used as a litter for his animals during the winter, or as a covering for his yards and other enclosures where animals are confined, and where the leaves will be in a situation readily to absorb the liquid voidings, and thus be reduced more speedily to the condition of ailment for growing crops. No compost heap should be formed without them, where they can be obtained, and compost made exclusively of them and other decomposable matters, will be found not only an economical, but efficient aid of fertility on any and every soil.

Fall Treatment of Grass Lands.

The prevailing practice is to pasture meadows in the fall, and never top dress with any material whatever. Stock is turned in to eat off the protection which the plants unaided would supply. If this cropping is continued late, as it generally is, the field is left bare, with exposed roots, when winter sets in, and the following spring the owner wonders why his grass has frozen out so badly. On wet meadows the trampling of stock has a most injurious effect, and they always select the best of the grass, leaving the worthless wild species to flourish and obtain the mastery.

It must be remembered that the whole process of raising hay is an unnatural one. When nature manages a grass crop without interference, re-seeding goes on every year, and young, fresh, vigorous plants are coming forward constantly to replace those that have fulfilled their mission. There is a constant growth, shading the ground and

protecting the roots from summer's drouth, and, falling down in the fall, furnishes a protecting blanket during the winter, and a rich top dressing in the spring. We cannot hope to work successfully against nature in any undertaking, and hence the man who never returns to his grass lands an equivalent for what is removed, and who annually crops his meadows early and late, finds them "run out" in a short time, and he is compelled to renew them at the expense of very much more time and labor than would be necessary to preserve them. The practice of one of our successful farmers will commend itself to every one. He top dresses every year liberally, and then feeds in the fall, according to circumstances—if the aftermath is light, he does not turn it in at all; if very heavy and likely to impede the growth of the succeeding crop, he pastures it to a corresponding extent. In regard to the material to be used in top dressing, more will be said at another time. Any fine fertilizer—barn-yard or road scrapings, lime, ashes, compost, plaster, etc.—which you have on hand, or can be obtained readily, should be applied without hesitation or unnecessary delay.—*Ohio Farmer.*

Ploughing and Ploughing Matches.

In no agricultural implement has there been so marked an improvement as in the plough. Were such a plough as that used in the days when Virgil wrote the *Georgics*, that old work on agriculture, exhibited at some of our agricultural exhibitions beside our modern ploughs, it would point out more distinctly than any words would do the great improvement. And in many things, even now, we are surprised to find in how much they were not one jot behind us. Their knowledge of the advantages to be derived from a judicious rotation of crops, and their mode of planting trees are among those branches of agriculture (for so we call tree planting) that are, in a great measure, the same that agricultural writers now recommend.

The following graphical description of a Canadian ploughing match, taken from an American paper, may be a further stimulus to our young plowmen:

"We are glad to see that our Canadian neighbors still cling to the old time plowing matches, and that the competitors enter into the spirit of the thing with a 'vim.' The following extract from an editorial letter to a Toronto paper, relating to the Provincial match at Scarborough, October 21, will be read with interest:—

"A ploughing match is always an animated scene, even to those whose knowledge of farming, as Josh Billings says, 'don't amount to much anyway.' Some fifty-three teams, most of them gay with flaunting ribbons, were stepping merrily up and down, with fifty-three stalwart Canadians hanging on behind in all conceivable postures, and sporting the variety and eccentricity of shirt patterns in which modern farm-fashion allows the lord of creation to array himself. The style of going about the work differs amazingly, and will number as many styles as there are ploughmen. First we have the old hand—the man who has 'been there before.' There is no fuss nor worry about him. As soon as his station is settled and his time given, in goes his plough—not hurriedly, but deliberately—and he drives right on, speaking low and gently to his team, to all appearance, except as to a little extra eagerness, just as cool as though he were plowing up his own field at home. He knows how the time is going, and he uses all of it. If he does not win, it is because some luckier man, as good a ploughman as he, has got a better station. Then we have the fussy man, who is all the time at the top of his voice yelling, 'haw, gee,' and 'git-up,' making his horses as nervous as himself; now straining on his plough, and now kicking frantically at some refractory lump as he passes it. Next is the slow man, who always commences as well, or better than any of them, but, when half way through, finds out that his time is short. Then there is 'hurrying in hot haste,' and that does not pay at a ploughing match. These are the principal types of competitors. Others are a compound of the three, with some individuality of their own infused.

"The teams are just as much a study as the men. The match is not to the strongest nor to the fastest team. Some teams, yesterday, just as clearly understood that they were to do their best as did the men who drove them. Not a foot did they put down in the wrong place. A whisper

from the ploughman was followed by instant obedience. Other teams again were, just as clearly thickheaded and stupid, treading on the plowing with a callousness of conscience that showed their education to have been neglected.

"The match yesterday had unusually interesting elements, as it was more than local. Among the competitors were at least two prize plowmen from the land o' cakes, who showed splendid command of their weapons, but still had to succumb to the native talent. Scarborough men are excited enough about their plowing now, but they will not be satisfied until there has been a grand international match, where they can show the world what they think of themselves is true—and they are quite satisfied that they could send the world home with a bee in his bonnet. The native horses have reason to be quite as complacent."

Manures and Their Value.

SOMETHING OF THEIR INFLUENCE UPON SOILS AND VEGETATION.

In all new countries containing a rich soil, manures hold but a small economic value with the farmer. Soon, however, as the soil becomes worn, attention is turned to its re-fertilization. The first means used is the application of barnyard manure. The farmer is often surprised that the result does not answer his expectations.

Why?

Perhaps the manure is the accumulation of years, sodden and bleached with rain, and weather beaten until its intrinsic value is, ton for ton, no more than so much worn soil. The volatile parts, constituting its chief value, and half its original worth, has been dissipated into the air, and carried hundreds, perhaps thousands of miles away, to be re-absorbed by the soil or ocean.

As a matter of fact, we may here state that it has been established by accurate observation, that about one-half by weight—the range being from 46 to 62 per cent.—of all the dirty matter absolutely free from water, consumed by animals as food, is deposited in the dung; and, also, that stable manure lying until it heats, loses 20 per cent.; and is gradually reduced thence to at least 50 per cent. of its original value.

Heat, air and moisture decompose all organic substances, and by the progress of the decomposition the greater part of the heat is generated, which carries this decomposition to destruction. So manure thrown into a pile, being moist, the moisture permeates the mass, fermentation ensues, and if not assisted by the interposition of some material as muck, loam or clay, the gasses quickly pass into the air and are lost.

Manures, as we have lately stated, unless in a state so they may become soluble in water, cannot be taken up by plants.

Decomposition renders manures soluble, and this, whether by rapid fermentation in heaps, with some interlying substance to fix the gasses, or by the slower pressure of decay in the soil. The gardener who uses horse manure as bottom heat in his forcing pits, finds it at the end of the season in a uniform state of black mould, if the fermentation has been properly carried on; and, in this state, it is true compost, with all its valuable properties intact, save what has passed into the growing plants; for, the layer of soil on top has arrested and fixed the volatile gasses. Thus he has served a two fold purpose—assisted the crops grown in the hot-beds; and, these sold, he has a supply of compost for out of door crops.

In former articles we have shown something of mechanical and other effects wherewith the application of manures to various soils, that compost tends to bind light soils, and long unfermented manure opened, and rendering more disintegrable stiff clays. So these mechanical means operate in directly opposite ways, and continue so long as the manure remains active; or, until its whole substance is exhausted. It sometimes, however, becomes necessary to apply compost to clay soils for particular purposes. For instance, when it is required to act quickly, as in the case of garden vegetables, wheat and other small grains. Thus, in making the compost heap, the absorbent materials should be different in the one case from what they are in the other.

For clay soils the manure should be alternated with hay, earth, the scrapings of ditches, leaf mould, or other light absorbent materials. When material is plenty, equal parts of manure and absorbents, or even two of mould to one of manure

may be used. If the same absorbent be used in the stable to take up the liquid manure, so much the better.

For light or sandy soils, the compost heap should be alternated with manure and clay, the latter made friable by the action of frost, or by swamp muck, or strong loam, always kept dry for the purpose. Whatever absorbent is used, the heap finished, it should be covered with earth, and if it prove so dry that a slow fermentation is not induced, it should be made moist—not wet—with water.

Plants are composed of four simple substances, which go to make up the bulk of their organism. These are, carbon, oxygen, hydrogen and nitrogen; the inorganic portions of plants—ash, is only about three per cent. of their substance. House plants, forming the chief food of man and herbivorous animals, contain nearly 50 per cent. of carbon. The sap of plants, and the water of the flesh of animals, contains eight pounds of oxygen to every nine of water. Hydrogen, the lightest substance in plants, is taken up by them in connection with nitrogen, as ammonia. Nitrogen, the great flesh-maker, forms a large per cent. of the air we breathe, and, in the form of ammonia, is the great stimulant of growing plants. Ammonia, as before shown, is largely formed by the decay of plants and animals; and, escaping into the atmosphere, is, with other floating gasses, washed down from time to time into such soils as are capable of receiving and absorbing them, and stored for the use of growing plants, or held for prospective ones.

Earthy or concentrated manures are especially needed, and greedily absorbed by plants while young; for their roots have penetrated and ramified but slightly in the earth. As they expand their mass of foliage, the roots become more numerous and stronger, and always in due proportion to the foliage; for the greater the foliage the stronger the roots, and the richer the soil the darker the foliage, when exposed directly to the light.

So the more thorough the cultivation the stronger and ranker the crop.

Why?

It enables the plant to draw its supplies more directly from the atmosphere, and this is why the early cultivation of corn, even before it is up, is so noticeably beneficial.

Why again?

It allows the ammonia and other fertilizing matter, washed out by the dew and rain, to be absorbed by the young rootlets of the tender seedling plant. Thorough cultivation, also, while the plants are young, allows the soil to absorb the heat of the sun. The earth, that other great laboratory of nature, renders soluble the matter decomposed by the air, heat and moisture contained within its recesses. So again, if all decaying matter on the surface of the earth is a source of carbonic acid, and all putrifying matter is giving off ammonia, the intelligent reader will readily see the necessity of saving it when washed down from the air, and also will as readily see the importance of conserving these valuable elements in his manure. It cannot be done by allowing the heaps to lie about, year in and year out, exposed to sun, rain and other vicissitudes constantly present. Lucky it is the air has this power of absorbing and rendering innocuous these escaping gasses, else the earth would soon be a vast charnel house, and disease and death would decimate both the human and animal races.

The English Wheat Crop.

Mr. J. B. Lawes writes as follows to the London Times:—

"The home wheat crop of 1874 was fairly abundant, and the ordinary requirements for consumption would probably have been satisfied with an import of about 9,000,000 quarters. Instead of this, the actual net imports were during the harvest year about 11,750,000 quarters, a quantity which has only once before been exceeded. In consequence of this superabundant supply, wheat has been cheaper than almost any other staple food, and large quantities have been used in this country as food for cattle and horses. A low range of prices has stimulated consumption in various ways, and a higher range will probably lead to greater economy. But judging of the yield of the home wheat crop in 1875 from the results of actual threshing in my own district, it is evident that to meet the ordinary requirement of consumption for the current harvest year, a larger

amount will be needed from other sources to supplement our own bad crop than was required during the crop year just past. The produce of 1875 resembles very closely that of the bad years 1867 and 1873; and so far as the unmanured and the artificially manured soil is concerned, that of 1871 also. According to the estimate of the Registrar General, the population of the United Kingdom would amount to nearly 32½ millions at the end of June, 1876; and making proper allowance for increase, the average number to be fed during the harvest year to end Aug. 31, 1876, will be close upon 33 millions. Reckoning the consumption of wheat to average 5½ bushels per head, the total quantity required within the harvest year will be about 22½ million quarters. I am disposed to estimate the deficiency per acre at from 18 to 20 per cent. below an average. Taking the gross produce of the kingdom at 10 million quarters, and allowing about a million quarters for seed, there would remain about 9 million quarters available for consumption as food. On this assumption, there would be required about 13½ million quarters to be provided for from stocks of old home and foreign wheat in hand at the commencement of the harvest year, Sept. 1, 1875, and from imports during the twelve months to end of August, 1875.

"That our demand upon foreign countries for the supply of wheat is rapidly increasing, is evident from the fact that while during the first half of the last twenty years the imports represented the consumption of 32 per cent. of the population, during the second half it was equal to nearly 45 per cent., and during the last three years to more than 50 per cent. of the total consumption."

Value of Covered Manure.

When rough sheds have been built to cover the manure heap, the crops fertilized by this pile have been increased in productiveness sufficient to pay for the shed-covering the first year. We have never seen any extra figures of the proportionate value of covered and uncovered manures, that we remember, until the following, which we find by Lord Kincaid, a Scotch land-owner and farmer. They present the best statement possible, we think, of the advantages of the plan.

Four acres of good soil were measured; two of them were manured with ordinary barn-yard manure, and two with an equal quantity of manure from the covered shed. The whole was planted with potatoes. The products of each acre were as follows:

Potatoes treated with barn-yard manure—

One acre produced 272 bushels.

One acre produced 292 bushels.

Potatoes manured from the covered sheds—

One acre produced 442 bushels.

One acre produced 471 bushels.

The next year the land was sown with wheat, when the crop was as follows:

Wheat on land treated with barn-yard manure—

One acre produced 48 bushels, 18 pounds (of 61 pounds per bushel).

One acre produced 42 bushels, 38 pounds (of 61 pounds per bushel).

Wheat on land manured from covered sheds—

One acre produced 55 bushels, 5 pounds (of 61 pounds per bushel).

One acre produced 53 bushel, 47 pounds (of 61 pounds per bushel).

The straw also yielded one-third more upon the land fertilized with the manure from the covered stalls, than upon that to which the ordinary manure was applied.—*Ec.*

POTATOES.—A trade is conducted in Europe to the extent of some millions sterling per year, in converting potatoes into farina or potato flour. Mr. Alex. S. Macrae, 45 Duke Street, Toronto, gave some information on the subject in the New York Sun and Chicago Times of the 21st and 22nd of September. The result has been considerable excitement among agriculturists and others, to know something of the actual process, and Mr. M. puts it to our discretion to publish the following details: 1. The potatoes are peeled in the raw state. 2. They are then crushed into an impalpable pulp, which is well washed. 3. The water is then evaporated, leaving a pure white residuum, which is the flour or farina. Three tons of potatoes, at a cost of say \$45, should make one ton of farina, of a value of \$100, leaving \$55 for wear, tear and profit.

Interesting Facts in Agricultural Improvements.

Joseph Harris, in the American Agriculturist, writes as follows:—

It is twenty-five years ago this month since I wrote my last article for the Genesee Farmer, and I have been writing every month since. I have just looked over that old article. I was fresh from the great experimental farm of Lawes & Gilbert, and the article embodied some of their most important results. The burden of it was: raise more clover, peas and beans, keep more stock and make more manure. I say the same thing to-day, only I should put first "cultivate the land more thoroughly and kill the weeds."

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Our main object should be to reverse this picture; cultivate less land and cultivate it well; beautify our homes; educate our immortal minds, and progress instead of retrograding.—German-town Telegraph.

a crop." That is precisely what has made your land poor, my dear sir, and it will continue to grow poorer with such treatment. By going over so much you don't half cultivate it, and weeds are allowed to grow, taking a good share of plant food to themselves, and your crops literally starve for want of nourishment and care. You have no time to collect weeds, leaves and muck for the manure heap. You are running too many different ways at the same time. Running over too much land, running in debt, and running down hill in the agricultural line. You had better run away from your farm and give some one else a chance to run it in a different way. A few weeks since, while in a pasture with the owner, I remarked that the grass and weeds and brakes which burdened the ground would be valuable if cut and used for bedding under horses and cows, and to work up into manure. "Worth twenty dollars," he replied, "but it is impossible for me to cut it; I am so pressed with other work."

This is but an example of thousands of farms and farmers in this State. Having so much land under cultivation they cannot seem to find time to cultivate, otherwise than in a slipshod way; have no time to attend to minor details so necessary for successful farming, and every succeeding year finds their farms poorer, themselves weaker and more discouraged, and the traces of decay gradually mark the family possessions.

Our main object should be to reverse this picture; cultivate less land and cultivate it well; beautify our homes; educate our immortal minds, and progress instead of retrograding.—German-town Telegraph.

What Plants Feed On—Animal Excretions.

We have in former numbers alluded to the able lectures of Prof. Goessman, of the Agricultural College of Massachusetts, which are undoubtedly among the most valuable additions to agricultural literature which we have had of late years. From one of these lectures, by Prof. G., we make the following extract, upon a subject which will be found of extreme interest. The conclusions at which the professor arrives in the last paragraphs, are in accordance with what we have so often endeavored to impress upon the attention of our readers. Professor Goessman takes the ground, that whilst full-grown animals return the entire amount of nitrogen consumed in their food, young animals retain some of it for their growth, cows pass part of it in their milk, and sheep secrete it in wool. That the excretions of high-fed oxen contain 2½ as much nitrogen and 3½ times as much phosphoric acid as those of cows and young stock. From these premises he argues:

"Where the practice prevails of keeping an account of the motions of the various items of plant food, it is customary to allow a loss to the manure pile of twenty-five per cent. of the nitrogen consumed in the food by its entering into the composition of milk, and various textures. Cows or oxen, for example, which require for their daily support from 6.5 to 7 ounces of nitrogen in their food, per 1,000 pounds of their live weight, consume annually from 148 to 178 pounds of nitrogen; deducting 25 per cent. for other purposes, we find that 111 to 128 pounds of nitrogen will be contained in their fresh excretions. This quantity of nitrogen is equal to that contained in from 750 to 800 pounds of the Chincha Island guano, or in 3,200 pounds of bone meal, or in 25,000 pounds of half-rotten barn-yard manure.

"The efficiency of animal manure as a nitrogenous fertilizer, depends, to a great extent, upon the preservation of the entire amount of both the liquid and solid portions. The liquid manure contains all the soluble constituents of the food, which usually represents the most valuable portion of the fertilizing substances of the whole excretions.

"The amount of nitrogen contained in the urine of domestic animals differs widely, independent of the kind of food consumed. The nitrogen of the food has been found distributed in their excretions as follows:

Table with 5 columns: In the case of, cows, oxen, sheep, horses, mean. Solid excretions, 45.5, 51.9, 43.7, 56.1, 49.1. Liquid, 18.3, 28.9, 51.8, 27.3, 34.

"The saving of the urine of our farm stock, therefore, deserves most careful attention, not only for the nitrogen it contains but other important items as well, e. g., potash and phosphoric acid. Its presence is essential for the production of anything like a complete fertilizer for the production

of crops which served as food; its absence depreciates the value of the stable manure more than half. To suffer the liquid manure to waste means loss of nitrogen and potash in particular. Fresh animal excrement contains but little ammonia; it is soon largely evolved, however, in consequence of a peculiar process of fermentation, and the manure is thus liable to suffer seriously in nitrogen compounds. Here the value of humus, loam or turf, as absorbents in stables, is readily apparent. These substances absorb ammonia freely, hence deserve recommendation for the above purpose. Dry, fresh, vegetable refuse material, as straw, leaves, etc., quickly absorb the liquid manure; but they are little fit to take care of the ammonia before they have advanced to a certain stage of decay, i. e., partly changed to humus. An addition of loam, or better, a daily sprinkling of plaster or sulphate of magnesia, is, for this reason, of particular importance. Partly rotten manure does not evolve ammonia to any appreciable extent. The incorporation of all kinds of vegetable refuse into the stable manure is to be recommended, for such decompose more readily when mixed in this way, and tend to make the stable manure a more efficient fertilizer. Grain and straw contain the same articles of plant food, and differ in this respect merely in regard to the relative proportions.

"Numerous actual experiments made in connection with stock feeding have furnished us with a good mode to calculate, approximately, the annual production of manure for every kind of farm stock. First, the entire fresh excretions of cattle, sheep and horses, amount, on an average, to 50 per cent. of the dry substance (at 212 degrees F.) of the food consumed. Secondly, one-fourth of the weight of the dry food consumed is required in dry straw, for example, to absorb the liquid excrement; and thirdly, stable manure contains, on an average, 25 per cent. of dry substance and 72 per cent. of water. Hence, allowing for absorbents, for every 100 pounds of dry food consumed we have 300 pounds of manure.

"The commercial value of stable manure may be approximately ascertained by allowing for every ton about ten pounds of potash, eight pounds of nitrogen and four pounds of phosphoric acid; but these figures are an average of very uncertain series, for we have seen that the quality of animal excrement depends altogether upon the food consumed. The agricultural value of stable manure stands higher than any commercial fertilizer containing these substances in like proportions; for barnyard manure not only furnishes plant food, but also acts beneficially on the physical condition of the soil.

"The only serious objection which can be urged against the exclusive use of the stable manure in mixed farming, consists in the fact that it becomes an incomplete fertilizer, in consequence of the too general practice of selling crops without restoring to the soil, in some suitable form, at least their ash constituents. And this is a serious objection.

"There are two ways by which barnyard manure may be a complete fertilizer for any crop, and these are: to restore the soil constituents sold in the barn produce, either by buying and feeding rich food in addition to the fodder crops raised, or by securing a sufficient amount of plant food by using commercial fertilizers. Which of these two courses is most economical, cannot well be decided on general principles, beyond the statement that the first course deserves careful consideration in the cultivation of special crops."—Am. Farmer.

We clip the following paragraph, which may be of interest to poultry fanciers, from The Country:—

I possess two ducks, cross-bred. This year they commenced early in March, in which month they produced 36 eggs, 20 in April, 39 in May, 11 in June, and 13 in July—a total of 119 eggs. They then ceased laying, and I certainly did not expect any more eggs this year; but on my return from a trip abroad, three weeks ago, I found that one of the ducks had recommenced laying. Since then it has deposited 9 eggs, making, with 8 laid while I was away, a grand total of 136, or an average of 60 to each bird. Is not such a large production of eggs very extraordinary? X. Knockholt, Ken., Eng., Oct. 6.

Dr. E. Lewis Sturtevant, of South Farmingham, Mass., says he has ascertained, from actual trial in wintering 130 fowls, that it takes one quart of grain per day for every ten fowls, between Nov. 1 and April 30.

Too Much Land.

I have been convinced for a long time that a large majority of our farmers are laboring under a great mistake in endeavoring to cultivate too much land; and the past season has fully confirmed that opinion, so that now I am ready to speak out my thoughts in regard to it.

I know that farmers look at it differently too much to quantity, instead of quality, through the mistaken idea that if they can only get over a large amount of land they are going to do a big thing and make a big show. They will plow up acre after acre, and plant and sow without dressing—are consequently driven to death throughout the season to work over and harvest so many acres, and in the fall they find that they are woefully deficient in the amount realized. Their big figures have dwindled to small proportions. I hold to the principle that one should cultivate just as much land as he has the capital and ability to cultivate well, and not an acre more. It is far better to get two tons of hay from one acre than from two. Better to harvest sixty bushels of corn from an acre than to go over three after that amount, as many do. So with grain and potatoes. So with everything raised. We have farmers here who will plant ten acres of potatoes and get five hundred bushels, and others that will harvest the same amount from two acres. Here is an evidence of the vast amount of labor entirely thrown away, to say nothing of seed wasted and feelings hurt, all on account of this insatiable thirst for accumulating and running over so much land.

"Oh! well," says one, "my land is poor and I must plant over a good deal of land to get much of

Garden, Orchard and Forest.

Gravel as a Mulch.

In the spring of 1874 I had the superintendence of planting some two hundred trees of various kinds in and around our public grounds. The spring and succeeding summer was one of unusual and excessive drought. About eighty of the trees—white elm, soft maple, American linden, catalpa, etc.—were planted on the sidewalks 8 or 10 feet high. They were planted in a rather poor clay ground in planting with a rich black, sandy loam, and within a few inches of the surface, the gutters being shallow and well powdered. The walk was covered with about four inches of gravel. Every one of these trees grew finely, many of them making a growth of branches two or more feet in length. Some of the elms when planted seemed almost dead, but they started and grew well. None of them were watered artificially. The same kind of trees planted within the enclosure, in much better soil, but without the gravel mulch, grew very badly. Many of them, probably half, died, notwithstanding constant care in watering, deep and well drained soil, shortening in, manuring with grass and litter, etc. The same fact attended more than half the trees planted by others all over the country. Hence, I conclude that gravel and small stones are unsurpassed as a mulch. They allow the rains to readily penetrate the soil, retain moisture, absorb heat and equalize the temperature. The practical utility of gravel as a mulch, where it can easily be procured, should be tested by all tree planters. It will not improve heavy clay soils at least, but will be beneficial.

Small Pots for House Plants.

How frequently do we hear the complaint—"I don't know why my plants do not bloom in winter!" they all seem to be thriving, but produce no flowers. The reason that such complaints are so common is a simple one. They grow their plants in pots that are too large for them; and when the time comes that they should bloom, we find that the substance that should go to the formation of buds and flowers taken up in the luxuriant growth of foliage with which the plant is clothed.

But this, although important, is not the only advantage to be gained by the use of small pots. They are so much handier in transferring from one place to another, occupy so little room, and are in every way so much more desirable than the large ones, that we would give them the preference even if they did not enhance the flowering qualities of the plants which were grown in them.

Of course, small pots are not to be recommended for all kinds of plants. There are certain plants that will do no good unless the roots have an abundance of room in which to expand and receive nourishment. But for such plants as ferns, geraniums, abutilons, succulents, and others, upon which we depend for flowers in winter, they will prove extremely valuable. Potted plants and others of which we do not expect flowers, but want a luxuriant growth of leaves, should be grown in large pots.

Like all other things, small pots have their objections. One, and the chief one, is the trouble of watering. If the atmosphere is dry, they should be watered every day, and the soil should be kept evenly moist. They may be watered twice a day with good effect. Again, large plants require more water than small ones. But a little trouble will do the plants no harm. Try small pots, those of you who are interested, and you will find that they are not many advantages to be gained in their use.—A. P. R.

Native Plants for Ward Cases.

A correspondent of the Rev. Mr. Fisher recommends the following native plants as producing a fine effect when grown in Ward cases:—Maiden Hair, small, common; Snake-root, of the smaller forms; Gold Thread; Sassafras; Cap. Mintwort; Liverwort; Spring Beauty; Yellow Pansy; Partridge Berry; and Hemlock Seedling and Wintergreen; also the common eye-pole. These native plants, with mosses, are far more satisfactory than green-house pets, and the Ward case is the most delightful study an invalid can have—or a well person either.

Prevent Girdling by Mice.

"In time of peace prepare for war," is a sound doctrine applied to orcharding. The maxim can be construed as advising the taking of means in early autumn to prevent the depredations of mice during the coming winter. Many orchards are injured every year by delaying steps for prevention till the ground is frozen, when the simplest method of preventing the mischief cannot be practiced. The easiest mode is to mound up the foot of the tree, having first cleared the orchard of weeds and grass by clean cultivation. The Country Gentleman says—

Field mice like nothing better than plenty of soft grass to burrow and creep under, and when they can get it they care very little whether there is an inch or a foot of snow above. But a clean surface above is not sufficient always, and where this precaution has not been attended to at the right season, we must resort to other remedies.

We have never found the practice of throwing up a small mound at the foot of each stem to fail—except in some extreme cases, where the snow above became crusty, forming a new base for the approaches of the mice. Usually this remedy may be regarded as safe and fully reliable, but the work should be done in a proper manner, with one earth compactly and smoothly placed, and beaten with a spade. The owner of a large, young orchard pronounced this remedy absurd, because, by throwing up mounds of soil in the grass or hard, the mice found a snug hiding place among the blocks of turf and the perforations far more than good. If he had first cut the sods apart, and made the mound with dead, compact, beaten earth, he would probably have saved his trees. These mounds need not be over a foot high, and if the land is clean, less will do.

If this remedy has not been provided before the ground is frozen for winter, it will, of course, be too late then to attempt it; but an excellent substitute for the earth may be found in oval ashes, which, if piled and compactly beaten about the tree, after having been partly moistened, will serve as an efficient protection. Moss is not particularly handy at any time, and they will never ascend under the snow over a steep surface of this material.

When neither embankment nor ash mounds can be or have been provided, mice may be kept away by treating the snow hard about the tree, whenever it falls or is drifted around them.

Another good remedy for small orchards is enclosing the trees in tarred pasteboard or sheathing paper. A roll of sheet iron or sheet tin is very efficient, and this may be applied at any time after the ground is frozen hard. Sheet tin is better than sheet iron, unless the iron is covered with gas tar. Rolling tin, furnished by twenty inches, will make four protectors to each sheet, each costing about five cents, and will last a lifetime. When applied, a little pressure while securing them about the tree will cause them to fit the ground. If properly bent, the spring of the sheet will hold the lapped edges firmly together.

A Simple Ornament.

Ladies who are always for new floral adornments will find that a pretty sitting-room ornament is made by taking a spruce cone and baking it in an oven till the scales open out equally. It is then filled with equal parts of sand and grass seed, a string tied to the top, and the whole put in the lark, in a jar, with water enough to come half way over the cone. In a week it is placed in the sunlight, when the seeds sprout rapidly, and in a month fill a gallon jar completely. It is then taken out and hung in the window. Every morning it should be thoroughly soaked in milk-warm water.

Treatment of House Plants.

Every two weeks all winter I take a handful of tobacco stems and steep them by pouring boiling water over them; then when the tea cools enough to bear the hand, I pour it over the plants. Some times the leaves wilt for a few moments, and then straighten out and have that bright, fresh look they have in summer after a shower. Then I weaken the tea a little more, and wet the ground in the pots, and I have no red spiders or green flies.—A. P. R.

A thin layer of sharp, silver sand, not only looks nice spread over the earth in pots of plants, but is also a specific against worms in the soil.

Evergreen Culture.

It is a little surprising while evergreens are so generally admired by all classes, and are so easily and cheaply grown, that more use is not made of them by farmers for adorning their grounds, or shelter for fruit orchards or plantations, as well as dwellings. After planting, their culture is not one what more difficult than corn, and to plant them when small is about as easy as the putting out of cabbage plants on a rainy day.

In these remarks I have in mind, of course, people of moderate means, with more or less land, and who desire to procure evergreens at a cheap rate. Large ones are costly; the freight on them is also costly; their handling is laborious; while without skillful treatment in planting and care afterwards, they are quite as likely to die as small ones. The cost of the latter is very moderate, say two dollars per hundred for plants 9 to 12 inches in height; these, if they have been several times transplanted in the nursery, will do for open air culture. Smaller ones can be had for less, but they usually need partial shade for a year or two, as their roots are so tender that a con- siderable portion will be killed outright by our fierce summer sunshine.

Where the soil is rich and mellow—rich enough to grow 50 bushels of corn per acre—it will doubtless be perfectly safe to plant them without any manure. Strike a furrow and plant about a foot apart in the row—or further apart if they are to remain there some years—and after planting, keep well cultivated, allowing no weeds to grow and the soil never to bake. If planted three or four feet apart, so that they can be cultivated both ways like corn, it will save considerable hard work, and where the grower has plenty of land this will be an excellent plan. With such treatment, and in good condition when received from the nursery, the losses will hardly reach three or four per cent; and after being grown in this way from one to three years, and well pruned during the time, they will be in excellent condition for planting where they are to permanently remain. They had better receive this preparatory culture, because then the best and firmest can be selected, and the back seed ones left for further culture. This chance to select the best is especially important where the purpose is to grow a hedge or screen, because then the lack of uniformity makes the work unsightly and unsatisfactory.

For growing in nursery rows, or for permanent hedge planting, one of the best manures is well pulverized swamp muck. If a trench can be made in the fall, and muck then distributed through it liberally, the freezing and thawing of the winter will make it a fine condition for the plants in the spring without other preparation. But what is wanted is that the muck must be freed from most of its surplus water and consequent sourness, hence the muck is not important. With all-out a shovelful to each plant, followed by good culture, they will grow and do well—will stand an ordinary drought with out injury—and if it is desirable to transplant them in the course of two or three years, it can be done with a ball of muck and earth adhering to the roots, which will both facilitate planting and will secure success in the new location. A round-pointed and long-handled shovel is the best implement for this work, as by it the roots can be easily cut so as to retain a fair sized ball of earth, and the necessary leverage is obtained from the handle for lifting from the ground. Then if placed on a small wood sleigh, or what is still better, a horse team, they can be readily moved by horse or ox power to the place for planting, with little danger of the earth being shaken from the roots.

Many details as to treatment or handling, and the best implements to use, will readily suggest themselves to an inquiring mind. No fullness of detail can insure success to an ignorant or chronic blunderer. But the man who will bear in mind the use of roots and tops, their relation to each other, the value of a mellow and fertile soil, and the means by which it is to be obtained, will find no difficulty in growing evergreens. One essential point is to get them well covered, as afterwards they can bear many hardships which would kill them out right at first. For instance, let no one plant small evergreens in a stiff soil and expect a rapid growth, no matter how rich the soil. The habit of our climate to droughts will soon make a mish of them. One purpose of muck in planting is to retain moisture, and coolness for the roots, and the frequent stirring of the soil is an extension of the same idea. But after four or five years this care will not be so essential, though still important where a rapid growth is desired.

Evergreen trees, but and espec the base when any there is a the leader over those pyramidal there is a all the brn and plants are care in aff Farmer.

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In th pre-em consists of to be th maturin months high a comb our rig The these, I but not grown, naked I like th ters, ov The layers

Evergreens need less pruning than deciduous trees, but they need some attention nevertheless, and especially when small, because thickness at the base can then be insured, and it never can when any considerable size is attained. When there is a scarcity of branches at the bottom, clip the leader, and also all side branches projecting over those at the base. The evergreen must be pyramidal—any other shape is an abortion. When there is a general lack of density, clip the ends of all the branches from top to bottom. Watchfulness and discretion in this particular when the plants are young, will generally render the same care in after years unnecessary.—P. S., in *Practical Farmer*.

Poultry Yard.

How Much Hens Eat.

The *Prairie Farmer* says:—

We have before us the record of an experiment made in January, 1869, bearing on this subject. A flock of forty-five grown chickens—a few of them full Brahmas, the others half-bloods—were allowed all the corn they could eat. They were fed from a hopper so arranged that corn was within their reach all the time, care being taken that none of it should be carried off by rats or mice or other intruders. In eighteen days the flock ate 144 pounds shelled corn, or an average of eight pounds per day for the forty-five chickens. At this rate, one chicken would eat 0.178 of a pound per day, and 100 would therefore eat 17.8 pounds per day. During the eighteen days this flock ate, besides the corn, nearly one peck of onions and turnips mixed, about two pounds of meat scraps and one head of cabbage. They were well supplied with water, lime, mortar, ashes and sand. The result of this experiment was that the hens became too fat, and toward the close of the term of eighteen days they laid fewer eggs than at the commencement, although as the season advanced the production of eggs should have increased. We prefer to give such an account of an actual experiment, stating the season, kinds of fowls, and manner of feeding, rather than to estimate, guess or theorize about the question proposed. This our correspondents may do at leisure. No invariable rule can be laid down. In the case here mentioned it was evident that a less quantity of food would have kept the flock in better condition, even during a winter month and in latitude 39.40 north.

Best Breeds of Poultry.

It is often asked which is the best breed of fowls to keep. This is like asking which is the best horse. If you want a horse to run for the Derby, you would not choose a cart horse; and if you wanted a dray horse, you would not choose a fine bred blood. The same with fowls: if you want egg producers, you want one kind; and if you want flesh or good hatchers you want another.

About common fowls, or mongrels, this is just the difference between them and pure bred—the one has no distinguishing properties, while the other has. It is impossible to combine the prolificacy of the egg producers to retain it with the feeding and hatching properties of the other. For the food that is converted into producing eggs will certainly not produce fat and flesh; and, conversely, the elements of nutrition which go to building up the body cannot be converted into supplying eggs. The properties and qualities of thoroughbred fowls have been attained by the same attention to breeding that has brought other stock to perfection—by observing the qualities most developed in the animal.

In the egg-producing class, the Leghorns stand pre-eminently above all others. This variety consists of the white and brown. The brown appears to be the favorite, being hardy, easily raised, and maturing quickly—the pullets often laying at four months. Pullets of this breed frequently lay as high as 260 eggs during the year. Their large combs and pendants require a warm house during our rigorous winters.

The next in high favor is the black Spanish; these, like the former, are non-setters and prolific, but not so easily raised. They do not, until nearly grown, get their full feathers, being generally half naked for a considerable time after hatching. These, like the Leghorn, require comfortable winter quarters, owing to their large comb and wattles.

The Houdans, a French breed, come next as layers and non-setters. This is what they call a

made breed between the Poland and Dorking, showing the characteristic crest of the former and the fifth toe of the latter. Although not so continual layers as the two varieties mentioned, yet they possess points superior to the others, as size, delicacy of flesh, and hardihood.

The small breeds, the different varieties of Hamburgs and Polands have their admirers as fancy fowls. They are excellent layers, partially non-incubators, but are not recommendable, owing to their size, as likely to improve our present stock of common fowls.

The Dorkings, as a class, may be considered the standard English fowl, and combine more general qualities than any other; regular setters, large size, plump, square built, delicate flesh, and highly flavored. They lay a full supply of eggs, and are probably the best table fowl raised. They likewise have large combs and wattles, like the Leghorn and Spanish. They do not thrive well on damp soil.

The Asiatics are the most extensively bred and most fashionable class at present raised in America, and, on the whole, are probably better adapted to the rigorous winters of the United States and Canadas than any other.—*Rural New Yorker*.

Management of Fowls.

You must, in order to be successful, have the proper accommodation for them, for in order for fowls to thrive and do well, they must have shelter from storms and cold winds, and that shelter or house must have proper ventilation and light. Next they must have space sufficient for exercise, and then look well to them and keep everything about their house and yard in a neat, clean and wholesome manner. Fowls need constant, everyday care; if you keep poultry free from vermin, their house and yards clean, feed good and wholesome food, keep them supplied at all times with clean, fresh water, and you will generally have a flock of healthy fowls. Time or space will not permit me to say or point out an exact bill of fare, neither is it necessary. A man to keep fowls must study their wants, and never try to force your fowls to eat what they do not like. Their food should be varied according to their tastes. I generally make it a practice of feeding in the morning; for young and adult fowls soft food, such as scalded bran or meal, and invariably for the evening meal, whole grain, such as wheat or corn. Small chicks can eat wheat, and I always keep them supplied with good, fresh well water. I allow them all the range my accommodations will permit, and the growing chicks I do not confine at all, unless I am compelled to. I consider it is, as a writer once said, the fore part of a chicken's existence that gives him size; therefore, if you expect to produce fowls of large size, don't coop or shut them up; they must have a great deal to eat, and, therefore, need exercise. Don't be afraid of over-feeding your growing chicks; it is an old and true saying that "money makes the mare go," and so feed makes the chickens grow. Care should be taken not to go for size alone. I like to see good, large, symmetrical birds, and we must have them in order to sell.

Cross-Bred Poultry.

We are gratified to find how well satisfied are those breeders of cross-bred fowls who took our advice and set up a yard of Brahma hens and Dorking cocks, and we doubt not that when the cold weather sets in or the March winds blow and eggs are wanted and not to be had from prettier but more delicate birds, our hints will be even more appreciated than now. The Brahma-Dorking is generally allowed to be an excellent table fowl. The superfluity of leg is done away with, and the absence of breast slices is not complained of by the Dorking cross, while the chicks partake of the strength and easy-going, contented disposition of the Brahma.

Now that the end of the season is come, our experience again declares that no chickens have stood up against gales so well as the Brahma-Dorkings; when others seemed stopped in growth, they flourished and feathered. Doubtless they consume a quantity of food, but if they make meat in proportion, where is the loss? For some weeks, too, our birds were scarcely fed by hand at all; they lived on the waste corn which otherwise would have been trodden under foot, and which, picked up by them, made fowl and so—cash. To those who keep only a few fowls, who want eggs when they are scarce, and "cut and come again" chicken, we recommend half a dozen Brahma hens and a Dorking cock.—*Agr. Gazette*.

French Fowls.

The Rev. C. C. Ewbank writes the following in *The Country*, published in London, England:—

There are many books now in existence on poultry in general, written by men who have had far more experience than myself, and, as such, must always claim our greatest respect. I have been a breeder of fowls for many years, during which time I have kept nearly all the different varieties commonly seen at our shows; but I have often felt myself, and I have no doubt others have felt the same, the want of some short and concise practical work on each particular breed, containing information for those who are anxious to embark in the poultry mania, which is increasing daily. I have been often asked what is the best breed to go in for, and, having given my advice, I have seen people go immediately to one of our large shows, and give a long price for a first-prize cock and as much for a first-prize hen, and then give up in disgust the following season, because the expensive first prize pair did not produce birds as good or better than themselves. If some of our experienced breeders and exhibitors would only confer a boon upon the public by publishing their experience, I think it would induce more persons to enter the fancy; and, instead of seeing at our shows a few good birds and hundreds of bad ones, we should see a majority of the former, and the competition would be more even and interesting.

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Garden, Orchard and Forest.

Gravel as a Mulch.

In the spring of 1870 I had the superintendence of planting some two hundred trees of various kinds in and around our public grounds. The spring and succeeding summer was one of unusual and excessive drought. About eighty of the trees—white elm, soft maple, American linden, catalpa, etc.—were planted on the sidewalks for shade trees. They were on an average ten and fourteen feet high. They were planted in a rather poor clay (mixed in planting with a rich, black, sandy loam), and within a few inches of the curbstones, the gutters being shallow and well bowldered. The walk was covered with about four inches of gravel. Every one of these trees grew finely, many of them making a growth of branches two or more feet in length. Some of the elms when planted seemed almost dead, but they started and grew well. None of them were watered artificially. The same kind of trees planted within the enclosures, in much better soil, but without the gravel mulch, grew very little. Many of them, probably half, died, notwithstanding constant care in watering, deep and well-drained soil, shortening in, mulching with grass and litter, etc. The same fate attended more than half the trees planted by others all over the country. Hence, I conclude that gravel and small stones are unsurpassed as a mulch. They allow the rains to readily penetrate the soil, retain moisture, absorb heat and equalize the temperature. The practical utility of gravel as a mulch, where it can easily be procured, should be tested by all tree planters. It will not injure heavy clay soils at least, but will be beneficial.

Small Pots for House Plants.

How frequently do we hear the complaint—"I don't know why my plants do not bloom in winter? they all seem to be thriving, but produce no flowers." The reason that such complaints are so common is simply this: They grow their plants in pots that are too large for them; and when the time comes that they should bloom, we find that the substance that should go to the formation of buds and flowers taken up in the luxuriant growth of foliage with which the plant is clothed.

But this, although important, is not the only advantage to be gained by the use of small pots. They are so much handier in transferring from one place to another, occupy so little room, and are in every way so much more desirable than the large ones, that we would give them the preference even if they did not enhance the blooming qualities of the plants which were grown in them.

Of course, small pots are not to be recommended for all kinds of plants; for there are certain plants that will do no good unless the roots have an abundance of room in which to expand and receive nourishment. But for such plants as fuchsias, geraniums, abutilons, cupheas, and others, upon which we depend for flowers in winter, they will prove extremely valuable. Foliage plants and others of which we do not expect flowers, but want a luxuriant growth of leaves, should be grown in large pots.

Like all other things, small pots have their objections, too; and the chief one is the drying out of moisture. If the atmosphere is dry, they should be watered every day; and if the sun shines brightly upon them, they may be watered twice a day with good effect. Again, large plants require more water than small ones. But a little drouth will do the plants no harm. Try small pots, those of you who are unsuccessful, and see if there are not many advantages to be gained in their use.—*Am. Parton.*

Native Plants for Ward Cases.

A correspondent of the *Rural New Yorker* recommends the following native plants as producing a fine effect when grown in Ward cases:

"Maiden's Hair Shield, common Brake, or any of the smaller ferns; Gold Thread, Solomon's Seal—the two-leaved; Rattle Snake Plantain, Bishop's Cap, Mitrewort, Liverwort, Spring Beauty, Violets, Partridge Berry, tiny Hemlocks, Cedars and Wintergreens; also the common Lycopods. These native plants, with mosses, are more satisfactory than green-house pets, and the Wardian case is the most delightful study an invalid can have—or a well person either."

Prevent Girdling by Mice.

"In time of peace prepare for war," is a sound doctrine applied to orcharding. The maxim can be construed as advising the taking of means in early autumn to prevent the depredations of mice during the coming winter. Many orchards are injured every year by delaying steps for prevention till the ground is frozen, when the simplest method of preventing the mischief cannot be practiced. The easiest mode is to mound up the foot of the tree, having first cleared the orchard of weeds and grass by clean cultivation. The *Country Gentleman* says:—

Field mice like nothing better than plenty of soft grass to burrow and creep under, and, when they can get it, they care very little whether there is an inch or a foot of snow above. But a clean surface alone is not sufficient always, and where this precaution has not been attended to at the right season, we must resort to other remedies.

We have never found the practice of throwing up a small mound at the foot of each stem to fail—except in some extreme cases, where the snow above became crustad, furnishing a new base for the approaches of the mice. Usually this remedy may be regarded as safe and fully reliable, but the work should be done in a proper manner, with fine earth compactly and smoothly placed, and beaten with a spade. The owner of a large, young orchard pronounced this remedy a humbug, because, by throwing up mounds of sod in the grassy orchard, the mice found a snug hiding place among the locks of turf, and the operation did more harm than good. If he had first cast the sods aside, and made the mound with clean, compact, beaten earth, he would probably have saved his trees. These mounds need not be over a foot high, and, if the land is clean, less will do.

If this remedy has not been provided before the ground is frozen for winter, it will, of course, be too late then to attempt it; but an excellent substitute for the earth may be found in coal ashes, which, if piled and compactly beaten about the tree, after having been partly moistened, will serve as an effectual protection. Mice do not particularly fancy it at any time, and they will never ascend under the snow over a steep surface of this material.

When neither embankment nor ash mounds can be or have been provided, mice may be kept away by treading the snow hard about the tree, whenever it falls or is drifted around them.

Another good remedy for small orchards is enclosing the trees in tared pasteboard or sheathing paper. A roll of sheet iron or sheet tin is very effectual, and this may be applied at any time after the ground is frozen hard. Sheet tin is better than sheet iron, unless the iron is covered with gas tar. Rolling tin, fourteen by twenty inches, will make four protectors to each sheet, each costing about five cents, and will last a lifetime. When applied, a little pressure while securing them about the tree, will cause them to fit the ground. If properly bent, the spring of the sheet will hold the locked edges firmly together.

A Simple Ornament.

Ladies who are always for new floral adornments will find that a pretty sitting-room ornament is made by taking a spruce cone and baking it in an oven till the scales open out equally. It is then filled with equal parts of sand and grass seed, a string tied to the top, and the whole put in the dark, in a jar, with water enough to come half way over the cone. In a week it is placed in the sunlight, when the seeds sprout rapidly, and in a month fill a gallon jar completely. It is then taken out and hung in the window. Every morning it should be thoroughly soaked in milk-warm water.

Treatment of House Plants.

Every two weeks all winter I take a handful of tobacco stems and steep them by pouring boiling water over them; then when the tea cools enough to bear the hand, I pour it over the plants. Sometimes the leaves wilt for a few moments, and then straighten out, and have that bright, fresh look they have in summer after a shower. Then I weaken the tea a little more, and wet the ground in the pots, and I have no red spiders or green flies.—*Rural New Yorker.*

A thin layer of sharp silver sand not only looks nice spread over the earth in pots of plants, but is also a specific against worms in the soil.

Evergreen Culture.

It is a little surprising while evergreens are so generally admired by all classes, and are so easily and cheaply grown, that more use is not made, of them by farmers for adorning their grounds, or shelter for fruit orchards or plantations, as well as dwellings. After planting, their culture is not one whit more difficult than corn, and to plant them when small is about as easy as the putting out of cabbage plants on a rainy day.

In these remarks I have in mind, of course, people of moderate means, with more or less land, and who desire to procure evergreens at a cheap rate. Large ones are costly; the freight on them is also costly; their handling is laborious; while without skillful treatment in planting and care afterwards, they are quite as likely to die as small ones. The cost of the latter is very moderate, say two dollars per hundred for plants 9 to 12 inches in height; these, if they have been several times transplanted in the nursery, will do for open air culture. Smaller ones can be had for less, but they usually need partial shade for a year or two, as their roots are so tender that a considerable portion will be killed outright by our fierce summer sunshine.

Where the soil is rich and mellow—rich enough to grow 50 bushels of corn per acre—it will doubtless be perfectly safe to plant them without any manure. Strike a furrow and plant about a foot apart in the row—or further apart if they are to remain there some years—and after planting, keep well cultivated, allowing no weeds to grow and the soil never to bake. If planted three or four feet apart, so that they can be cultivated both ways like corn, it will save considerable hard work, and where the grower has plenty of land this will be an excellent plan. With such treatment, and in good condition when received from the nursery, the losses will hardly reach three or four per cent.; and after being grown in this way from one to three years, and well pruned during the time, they will be in excellent condition for planting where they are to permanently remain. They had better receive this preparatory culture, because then the best and thriest can be selected, and the backward ones left for further culture. This chance to select the best is especially important where the purpose is to grow a hedge or screen, because then the lack of uniformity makes the work unsightly and unsatisfactory.

For growing in nursery rows, or for permanent hedge planting, one of the best manures is well pulverized swamp muck. If a trench can be made in the fall, and muck then distributed through it liberally, the freezing and thawing of the winter will make it in fine condition for the plants in the spring without other preparation. But what is wanted is that the muck must be freed from most of its surplus water and consequent sourness, hence the mode is not important. With about a shovelful to each plant, followed by good culture, they will grow and do well—will stand an ordinary drouth without injury—and if it is desirable to transplant them in the course of two or three years, it can be done with a ball of muck and earth adhering to the roots, which will both facilitate planting and will secure success in the new location. A round-pointed and long-handled shovel is the best implement for this work, as by it the roots can be easily cut so as to retain a fair sized ball of earth, and the necessary leverage be obtained from the handle for lifting from the ground. Then if placed on an old wood sleigh, or what is still better, a "stone boat," they can be readily moved by horse or ox power to the place for planting, with little danger of the earth being shaken from the roots.

Many details as to treatment or handling, and the best implements to use, will readily suggest themselves to an inquiring mind. No fullness of detail can insure success to an ignorant or chronic blunderer. But the man who will bear in mind the use of roots and tops, their relation to each other, the value of a mellow and fertile soil, and the means by which it is to be obtained, will find no difficulty in growing evergreens. One essential point is to get them well started, as afterwards they can bear many hardships which would kill them outright at first. For instance, let no one plant small evergreens in a stiff sod and expect a rapid growth, no matter how rich the soil. The liability of our climate to drouths will soon make a finish of them. One purpose of muck in planting is to retain moisture and coolness for the roots, and the frequent stirring of the soil is an extension of the same idea. But after four or five years this care will not be so essential, though still important where a rapid growth is desired.

Evergreens need less pruning than deciduous trees, but they need some attention nevertheless, and especially when small, because thickness at the base can then be insured, and it never can when any considerable size is attained. When there is a scarcity of branches at the bottom, clip the leader, and also all side branches projecting over those at the base. The evergreen must be pyramidal—any other shape is an abortion. When there is a general lack of density, clip the ends of all the branches from top to bottom. Watchfulness and discretion in this particular when the plants are young, will generally render the same care in after years unnecessary.—*P.S., in Practical Farmer.*

Poultry Yard.

How Much Hens Eat.

The *Prairie Farmer* says:—

We have before us the record of an experiment made in January, 1869, bearing on this subject. A flock of forty-five grown chickens—a few of them full Brahmas, the others half-bloods—were allowed all the corn they could eat. They were fed from a hopper so arranged that corn was within their reach all the time, care being taken that none of it should be carried off by rats or mice or other intruders. In eighteen days the flock ate 144 pounds shelled corn, or an average of eight pounds per day for the forty-five chickens. At this rate, one chicken would eat 0.178 of a pound per day, and 100 would therefore eat 17.8 pounds per day. During the eighteen days this flock ate, besides the corn, nearly one peck of onions and turnips mixed, about two pounds of meat scraps and one head of cabbage. They were well supplied with water, lime, mortar, ashes and sand. The result of this experiment was that the hens became too fat, and toward the close of the term of eighteen days they laid fewer eggs than at the commencement, although as the season advanced the production of eggs should have increased. We prefer to give such an account of an actual experiment, stating the season, kinds of fowls, and manner of feeding, rather than to estimate, guess or theorize about the question proposed. This our correspondents may do at leisure. No invariable rule can be laid down. In the case here mentioned it was evident that a less quantity of food would have kept the flock in better condition, even during a winter month and in latitude 39.40 north.

Best Breeds of Poultry.

It is often asked which is the best breed of fowls to keep. This is like asking which is the best horse. If you want a horse to run for the Derby, you would not choose a cart horse; and if you wanted a dray horse, you would not choose a fine bred blood. The same with fowls: if you want egg-producers, you want one kind; and if you want flesh or good hatchers you want another.

About common fowls, or mongrels, this is just the difference between them and pure bred—the one has no distinguishing properties, while the other has. It is impossible to combine the prolificacy of the egg producers to retain it with the feeding and hatching properties of the other. For the food that is converted into producing eggs will certainly not produce fat and flesh; and, conversely, the elements of nutrition which go to building up the body cannot be converted into supplying eggs. The properties and qualities of thoroughbred fowls have been attained by the same attention to breeding that has brought other stock to perfection—by observing the qualities most developed in the animal.

In the egg-producing class, the Leghorns stand pre-eminently above all others. This variety consists of the white and brown. The brown appears to be the favorite, being hardy, easily raised, and maturing quickly—the pullets often laying at four months. Pullets of this breed frequently lay as high as 260 eggs during the year. Their large combs and pendants require a warm house during our rigorous winters.

The next in high favor is the black Spanish; these, like the former, are non-setters and prolific, but not so easily raised. They do not, until nearly grown, get their full feathers, being generally half naked for a considerable time after hatching. These, like the leghorn, require comfortable winter quarters, owing to their large comb and wattles.

The Houdans, a French breed, come next as layers and non-setters. This is what they call a

made breed between the Poland and Dorking, showing the characteristic crest of the former and the fifth toe of the latter. Although not so continual layers as the two varieties mentioned, yet they possess points superior to the others, as size, delicacy of flesh, and hardihood.

The small breeds, the different varieties of Hamburgs and Polands have their admirers as fancy fowls. They are excellent layers, partially non-incubators, but are not recommendable, owing to their size, as likely to improve our present stock of common fowls.

The Dorkings, as a class, may be considered the standard English fowl, and combine more general qualities than any other; regular setters, large size, plump, square built, delicate flesh, and highly flavored. They lay a full supply of eggs, and are probably the best table fowl raised. They likewise have large combs and wattles, like the Leghorn and Spanish. They do not thrive well on damp soil.

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Stock Sales.

We hope to be able to make this department of the FARMER'S ADVOCATE so interesting as to be really indispensable to all interested in the breeding and feeding, importing and exporting of pure bred stock. We have to thank our friends for reports sent to us, and to request all breeders and importers to forward to us, at an early date, such information, and to help us in our endeavors to aid in the encouragement of this very important branch of national industry and wealth. All will agree with us in our conviction that the importance of the improvement of our live stock is secondary to none other in Canada.

We notice that John R. Craig, of Burnhamthorpe, purchased at Warnock & Jenkins' sale Duchess of Springwood for \$2,250. At Mr. H. P. Thompson's sale Princess Gwynne for \$825. At North Elkhorn Importing Co.'s sale Lady Seraphina 6th for \$1,600.

John Snell's Sons, Edmonton, Ont., report sales of 25 Cotswolds at the St. Louis, Mo., Fair, 13 of them lambs, at an average of \$85 each. Thirty Cotswold ram lambs, in the last 3 months, at an average of \$55 each; 5 of these sold at \$100 each—lowest price, \$25. Six imported shearling rams at \$200 each. Imported ram Palmer, 3 years old, to W. W. Thornton, Shelbyville, Ill., \$225.

Sixty-five Berkshire pigs, in the last six months, at an average of \$43 each; lowest price, \$15; highest, \$90.

Received from England, Oct. 26, four Berkshire sows and one young boar. Sold one of the sows to M. F. Dunlap, Jacksonville, Ill., for \$300, gold. Demand for good Berkshire and Cotswolds unusually good, and prices very satisfactory.

Jardine & Son, Hamilton, report they have made a number of sales this fall. Sold at the Guelph Fair the Ayrshire heifer Hop Maid, 1 year old, to Mr. A. Preston—price, \$125; P. E. bull calf Robbie Bruce, 6 months old, to Rothwell Bros., Ottawa—price, \$120. Sold two at Toronto Fair—Annie Lawrie, P. B. C.—price, \$400. Nov. 15th, sold to John McPherson Rae, Kingsville, Essex Co., three Ayrshires, viz., one bull calf, 7 months old, and two heifers, one year old—price, \$450. Report their stock all doing well, after taking first herd prize at the Provincial, and sweeping the ring at Ottawa, Guelph, Hamilton and Toronto.

Hugh Thompson, Kinellar Farm, St. Mary's, reports having lately made sales to M. W. Serrell, of Middlefield, Conn., of the following Shorthorn cattle, viz.: Matchless 17th, three years old, \$800; Orange Blossom 25th, one year old, \$1,000; Village Lass, calf, \$600; Mysie 38th, calf, \$500. All to be paid in gold.

Wm. M. Miller, Brougham, reports having just received from Messrs. Cole and Walker, Gloucestershire, Eng., about eighty Cotswold shearing ewes, and a number of shearing rams and ram lambs. They were selected by Mr. S. Beattie in person, and brought over by him. They are said to be the best lot yet imported. Mr. Miller also reports that all his stock are doing well; and that he has four young calves, all red, which are also doing well.

Hon. M. H. Cochrane, Compton, P. Q., effected some important sales of Shorthorns while in England, among them the Booth bull Royal Commander, to Hugh Aylmer, Esq., for 1150 guineas, and to A. H. Brown, Esq., the two year old cow Forget-me-not, and four of Royal Commander's heifers, receiving 3,500 guineas for the five.

Messrs. Claybrook & Pearce, Maysville, Ky., recently purchased of A. J. Alexander, of Dumfries Township, Ont., for \$3,500, the Shorthorn Lord Bates 3rd, a roan of July, 1875.

F. W. Stone, Guelph, Ont., has made the following sales:—To Hon. F. Stump, Cecil Co., Md., a Shorthorn bull calf; to Hon. A. McQueen, Frederickton, N. B., the Hereford bull Chieftain, winner of the first prize at Ottawa, 1875.

Messrs. A. and A. Stewart, the large cattle breeding firm of Lobo, have sold a herd of Durhams, consisting of four females, to Mr. Ferrill, of Middlefield, Conn., for \$3,000. The cattle that brought this handsome figure are of what is termed the Seraphina Strain, and a two year old

of the same family was sold by them last year for \$1,000. At a recent sale in Kentucky an animal of the same family sold for \$2,600 and another for \$1,600. The last named came to Canada. The same breed of cattle is also very popular in England. The Messrs. Stewart deserve credit for their enterprise, and it is to be hoped that the venture will be one of continued profit to them.

Mr. Campbell, of Auchindarroch, Scotland, at his annual sale of shealing tops, received an average price of £5 18 6 per head. The top price was £12 10.

At the great autumn sale at Hawick, Scotland, by Messrs. A. Oliver & Son, the sale lasted all day, and the number of head disposed of was about 14,000. The sale was the best for old sheep in the border flockmaster's experience.

Ballinaston Fair, Ireland, is said to have been the smallest recorded for over 20 years. The returns show that on the first day 35,371 head were sold; on the first day last year 56,856 were sold. Some wethers were sold for 4 guineas, and some ewes made 75s.

The Ohio Farmer says: "The roan heifer calf, 22nd Duchess of Airdrie, four months, by 24th Duke of Airdrie 1725, out of the 16th Duchess of Airdrie by 10th Duke of Thorndale, is a salable animal. It is not three months yet since Messrs. B. B. Groom & Son purchased her for \$12,000. Messrs. Spears & Son, Tallula, Ill., bought her at B. B. Groom's sale, last month, for \$17,500, and they sold her the other day to Geo. Fox, England, for \$22,000."

From a notice in the Farmers' Home Journal, it appears that the buyers at the recent series of Kentucky Sales, not residing in that State, comprised 18 breeders from Illinois, 15 from Indiana, 13 from Iowa, 8 from Ohio, 6 from Missouri, 3 each from Michigan and Vermont, 2 each from New York, Connecticut, Canada, Pennsylvania, Virginia and Tennessee, and 1 each from Minnesota, Massachusetts and West Virginia—15 States and Canada, showing a very wide distribution of the herds sold, and also affording evidence of marked progress as breeding States, particularly perhaps in Indiana and Iowa.

[Received as going to press: Report of F. W. Stone. This report we have had to abridge very much, it having been received so late. All reports of live stock sales should be in our hands by the 20th of each month.]

Recent importations of thoroughbred stock made by Frederick Wm. Stone, of Guelph, Ont.

SHORTHORNS.

No. 1—Ruby 2nd, red; calved January, 1870; sire, Lord Warwick.

No. 2—Lilly 2nd, roan; calved 2nd January, 1872; sire, Lord Warwick.

No. 3—Lady Jane, red; calved 8th March, 1874; sire, British Lion.

No. 4—Lady Smith, red; calved 14th March, 1874; sire, British Lion.

No. 5—Recruit, calved 30th January, 1874; sire, British Lion.

The above were bred by Sir Frederick C. Smythe, Acton, Burwell, England, and arrived in Guelph November, 1874.

No. 6—Chilton Duchess, roan; calved 11th April, 1871; sire, Cambridge Duke 4th.

No. 7—Sultana 7th, roan; calved 5th April, 1872; bred by the late Mr. Abbot, Ospringe, Kent; sire, Icarus.

No. 8—Sultana 11th, red and white; calved 2nd October, 1874; sire, Duke of Maidstone.

No. 9—Consolation, red; calved 19th February, 1873; sire, Earl of Lancaster.

No. 10—Anchovy, red; calved 2nd February, 1873; sire, Caballer.

No. 11—Polyanthus, red; calved 10th March, 1873; sire, Duke John.

The above were bred by Mr. J. A. Mumford, Brill, England, and arrived in Guelph on the 4th of July, 1875.

No. 12—Sultana 7th, red; calved 5th April, 1874; sire, 2nd Grand Duke of Geneva.

No. 13—May Flora 3rd, red and white; calved 22nd May, 1874; sire, 6th Duke of Oneida.

The above were bred by Mr. Leney, Wateringburg, England, and arrived in Guelph 1st August 1875.

No. 14—Jesdemona, red; calved 25th November, 1869; sire, 3rd Duke of Geneva.

No. 15—Queen of Weston 2nd, red and white; calved November 10th, 1870; sire, Duke of Kent.

No. 16—Queen of Weston 5th, roan; calved 6th December, 1874; sire, Cherry Fawsley.

No. 17—Seamstress, red roan; calved August, 17th, 1874; sire, Cherry Grand Duke 5th.

No. 18—Didona 3rd, red; calved 19th December, 1874; sire, 2nd Duke of Milcote.

The above were bred by Sir G. R. Philips, Weston Park, Warwickshire, England and reached Guelph 1st Aug, 1875.

No. 19—Jessica, red; calved May 31st, 1872; bred by Mr. Leney, Wateringburg, Kent, England; sired by 15th Grand Duke.

No. 20—Bull Calf, red; calved August 21st 1875; sired by 8th Duke of Geneva.

No. 21—Formosa, red roan; calved 23rd February 1874; bred by Lord Skelmersdale, Lancashire, England; sired by Cherry Grand Duke 5th.

No. 22—Baron Berkeley, roan; calved January 10th, 1875; bred by the Earl of Bective, Underley Hall, Westmoreland, England; sired by the 3rd Duke of Gloucester.

HEREFORD CATTLE.

No. 1—Beauty 5th, red, with white face; sire, Dauphin.

No. 2—Governor 4th, red, with white face; sire, Prizeman.

No. 3—Portrait 3rd, red, with white face; calved 25th December, 1873; sire, Prizeman.

The above were bred by Mr. J. B. Green, Marlborough Lodge, Leintwardine, Herefordshire.

Sheep imported Oct., 1874—1 two-shear Cotswold ram, bred by Mr. R. Garne; 1 shearing Cotswold ram, bred by Mr. Savidge; 1 two-shear Southdown ram; 2 shearing Southdown rams; 11 shearing ewes, including the 2nd prize pen at Royal.

Cotswold sheep imported Aug. 27, 1875—1 two-shear ram, bred by Mr. Godwin; 1 shearing ram, bred by Mr. R. Garne; 2 ram lambs, bred by Mr. M. Savidge.

Frederick Wm. Stone, Guelph, Ont., has made the following recent sales, viz.:

SHORTHORNS.

To H. Walker, Walkerville, Ont., yearling bull Cyrus, red; got by Sheriff. To C. S. Smith, Acton, Ont., yearling bull Zephyr, roan; got by Sheriff; also yearling heifers, Lady Smith, red; got by British Lion; and Maggie Bell, roan; got by Constance Duke 7753. To Hon. Frederick Stump, Perryville, Cecil Co., Md., bull calf Lord Clancharlie, red and white; got by Airdrie Duke 3rd.

HEREFORDS.

Sales of yearling bulls—Canadian, by Commander-in-Chief, to John Merryman. Clandeboye, by Victor 2nd, to F. J. Chadwick, Guelph, Ont. Sir Walter, by Commander-in-Chief, to John Challen, Townsend, Ont. Dreadnaught, by Victor 2nd, to John Gordon, Puslinch, Ont. Chieftain, by Commander-in-Chief, Hon. A. McQueen, Fredericton, New Brunswick.

COTSWOLD SHEEP.

To W. L. Waddy, Shelby Co., Ky., 1 two-shear ram and one shearing ewe. To N. McConathy, Lexington, Ky., 1 two-shear ram. To Mr. Miller, Paris, Ont., 1 two-shear ram. To F. G. Grieve, Lakefield, Ont., one ram and twenty ewes. To Ed. Sweeney, Cooperstown, Pa., one shearing ewe.

SOUTHDOWNS.

To the Ontario School of Agriculture, Guelph, 1 imp. two-shear ram and 10 ewes. To D. Perley, Paris, Ont., 1 ram lamb.

To Mr. McGregor, Seaforth, Ont., 1 Berkshire boar pig.

SALES AT TORONTO, CONVENTION WEEK.

The next annual meeting of the American Association of Shorthorn Breeders convenes at Toronto, Dec. 2nd, and an important joint sale of Shorthorns, from the herds of John R. Craig, James W. Wadsworth, Sumner & Hilton and Col. John B. Taylor, has been arranged to follow as soon as the convention adjourns. About 60 head will be offered, all we believe, fashionably bred, including Princesses, Rose of Sharon, Lady Bates, Barringtons, Kirkelevingtons, Craggs, Fenel Duchesses, Erantics, Paris, Mazurkas, Constances, Seraphinas, Cypresses, etc.

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The Story.

Queen Tita's Wager.

CHAPTER I.

FRANZISKA FAHLER.

It is Christmas morning in Surrey—cold, still and gray, with a frail glimmer of sunshine coming through the bare trees to melt the hoar-frost on the lawn. The postman had just come out, swinging the gate behind him. A fire burns brightly in the breakfast room; and there is silence about the house, for the children have gone off to climb Box-hill before being marched to church.

The small and gentle lady who presides over the household, walks sedately in, and lifts the solitary letter that is lying on her plate. About three seconds suffice to let her run through its contents, and then she suddenly cries:

"I knew it! I said it! I told you two months ago she was only flirting with him; and now she has rejected him. And, oh! I am so glad of it. The poor boy!"

The other person in the room, who has been meekly waiting for his breakfast for half an hour, ventures to point out that there is nothing to rejoice over in the fact of a young man having been rejected by a young woman.

"If it were final, yes! If those two young folks were not certain to go and marry somebody else, you might congratulate them both. But you know they will. The poor boy will go courting again in three months' time, and be vastly pleased with his condition."

"Oh, never, never!" she says; "he has had such a lesson. You know I warned him. I knew she was only flirting with him. Poor Charlie! Now I hope he will get on with his profession, and leave such things out of his head. And as for that creature—"

"I will do you the justice to say," observed her husband, who is still regarding the table with a longing eye, "that you did oppose this match, because you hadn't the making of it. If you had brought these two together they would have been married ere this. Never mind; you can marry him to somebody of your own choosing now."

"No," she says, with much decision, he must not think of marriage. He can not think of it. It will take the poor lad a long time to get over this blow."

"He will marry within a year."

"I will bet you whatever you like that he doesn't," she says, triumphantly.

"Whatever I like? That is a big wager. If you lose, do you think you could pay? I should like, for example, to have my own way in my own house."

"If I lose you shall," said the generous creature; and the bargain is concluded.

Nothing further is said about this matter for the moment. The children return from Box-hill, and are rigged out for church. Two young people, friends of ours, and recently married, having no domestic circle of their own, and having promised to spend the whole Christmas-day with us, arrive. Then we set out, trying as much as possible to think that Christmas-day is different from any other day, and pleased to observe that the younger folks, at least, cherish the delusion.

But just before we reach the church I say to the small lady who got the letter in the morning, and whom we generally call Tita,

"When do you expect to see Charlie?"

"I don't know," she answers. After this cruel affair he won't like to go about much."

"You remember that he promised to go with us to the Black Forest?"

"Yes; and I am sure it will be a pleasant trip for him."

"Shall we go to Huferschingen?"

"I suppose so."

"Franziska is a pretty girl."

Now, you would not think that any great mischief could be done by the mere remark that Franziska was a pretty girl. Anbody who had seen Franziska Fahler, niece of the proprietor of the "Golden Book" in Huferschingen, would admit that in a moment. But this is, nevertheless, true, that our important but diminutive Queen Tita was very thoughtful during the rest of our walk to this little church; and in church, too, she was thinking so deeply that she almost forgot to look at the effect of the decorations she had nailed up the day before. Yet nothing could have offended her in the bare observation that Franziska was a pretty girl.

At dinner, in the evening, we had our two guests and a few young fellows from London who did not happen to have their families or homes there. Curiously enough, there was a vast deal of talk about travelling, and also about Baden, and more particularly about the southern districts of Baden. Tita said the Black Forest was the most charming place in the world; and as it was Christmas-day, and as we have been listening to a sermon all about charity, and kindness, and consideration for others, nobody was rude enough to contradict her. But our forbearance was put to a severe test, when, after dinner, she produced a photographic album and handed it round, and challenged everybody to say whether the young lady in the corner was not absolutely lovely. Most of them said that she was certainly very nice looking; and Tita seemed a little disappointed.

I perceived that it would no longer do to say that Franziska was a pretty girl. We should henceforth have to swear by everything we held dear that she was absolutely lovely.

CHAPTER II.

ZITA'S "GOLDEN BOOK."

We felt some pity for the lad when we took him aboard with us; but it must be confessed that at first he was not a very desirable travelling companion. There was a gloom about him. Despite the eight months that had elapsed, he professed that his old wound was still open. Tita treated him with the kindest maternal solicitude, which was a great mistake; tonics, not sweets, are required in such cases. Yet he was very grateful; and he said, with a blush, that, in any case, he would not rail against all women because of the badness of one. Indeed, you would not have fancied he had any great grudge against woman-kind. There were a great many English abroad that

autumn, and wemest whole batches of pretty girls at every station and every table *à la carte* on our route. Did he avoid them, or glare at them savagely, or say hard things of them? Oh, no!—quite the reverse. He was a little shy at first; and when he saw a party of distressed damsels in a station, with their bewildered father in vain attempting to make himself understood to a porter, he would assist them in a brief and business-like manner, as if it were a duty, lift his cap, and then march off relieved. But by-and-by he began to make acquaintances in the hotels; and, as he was a handsome, English-looking lad, who bore a certificate of honesty in his clear gray eyes and easy gait, he was rather made much of. Nor could any fault be decently found with his appetite.

So we passed on from Königswinter to Coblenz, and from Coblenz to Heidelberg, and from Heidelberg south to Freiburg, where we bade adieu to the last of the towns, and laid hold of a trap with a pair of ancient and angular horses, and plunged into the Holfenthal, the first great gorge of the Black Forest mountains. From one point to another we slowly urged our devious course, walking most of the day, indeed, and putting the trap and ourselves up for the night at some quaint roadside hostelry, where we ate of roe-deer, and drank of Affenthaler, and endeavored to speak German with a pure Waldshut accent. And then, one evening, when there was a clear green-and-gold sky overhead, and when the last rays of the sun were shining along the hills and touching the stems of the tall pines, we drove in a narrow valley, and caught sight of a large brown building of wood, with projecting eaves and quaint windows, that stood close by the forest.

"Here is my dear inn!" cried Tita, with a great glow of delight and affection in her face. "Here is *mein gutes*. That! *Ich grüss dich ein tausend Mal!* And here is old Peter come out to see us; and there is Franziska!"

"Oh! this is Franziska, is it?" said Charlie.

Yes, this was Franziska. She was a well-built, handsome girl of nineteen or twenty, with a healthy, sun-burned complexion, and dark hair plaited into two long tails, which were tucked up and twisted into a knot behind. That you could see from a distance. But on nearer approach you found that Franziska had really fine and intelligent features, and a pair of frank, clear, big brown eyes that had a very straight look about them. They were something of the eyes of a deer, indeed; wide apart, soft, and apprehensive, yet looking with a certain directness and unconsciousness that overcame her natural girlish timidity. Tita simply flew at her and kissed her heartily, and asked her twenty questions at once. Franziska answered in very fair English, a little slow and formal, but quite grammatical. Then she was introduced to Charlie, and she shook hands with him in a simple and unembarrassed way, and then she turned to one of the servants and gave some directions about the luggage. Finally, she begged Tita to go indoors and get off her travelling attire, which was done, leaving us two outside.

"She's a very pretty girl," Charlie said carelessly. "I suppose she's sort of head-cook or kitchen-maid here."

"The impudence of these young men is something extraordinary!"

"If you wish to have your head in your hands," I remarked to him, "just you repeat that remark at dinner. Why, Franziska is no end of a swell. She has two thousand pounds and the half of a mill. She has a sister married to the Geheimer-Ober-Hofbaurath of Hesse-Cassel. She has visited both Paris and Munich; and she has her dresses made in Freiburg."

"But why does such an illustrious creature bury herself in this valley, and in an old inn, and go about bareheaded?"

"Because there are some folks in the world without ambition, who like to live a quiet, decent, homely life. Every girl can't marry a Geheimer-Ober-Hofbaurath. Ziska, now, is much more likely to marry the young doctor here."

"Oh, indeed! and live here all her days. She couldn't do better. Happy Franziska!"

We went indoors. It was a low, large, rambling place, with one immense room, all round with rose-leer's horns, and with one lesser room fitted up with a billiard-table. The inn lay a couple of hundred yards back from Huferschingen, but it had been made the head-quarters of the keepers, and just outside this room were a number of pegs for them to sling their guns and bags on when they came in of an evening to have a pipe and a schoppen of white wine. Ziska's uncle and aunt were both large, stout and somnolent people, very good natured and kind, but a trifle dull. She had the management of the place, and she was not slow to lend a hand if the servants were remiss in waiting on us. But that, it was understood, was done out of compliment to our small Queen Tita.

By-and-by we sat down to dinner, and Franziska came to see that everything was going on straight. It was a dinner "with scenery." You forgot to be particular about the soup, the venison and the Affenthaler when, from the window at your elbow you could look across the narrow valley and behold a long stretch of the Black Forest shining in the red glow of the sunset. The lower the sun sank the more intense became the crimson light on the tall stems of the pines; and then you could see the line of shadow slowly rising up the side of the opposite hill until only the topmost trees were touched with the fire. Then these, too, lost it, and all the forest around us seemed to have a pale, blue mist stealing over it as the night fell and the twilight faded out of the sky overhead. Presently the long undulations of fir grew black, the stars came out, and the sound of the stream could be heard distantly in the hollow; and then, at Tita's wish, we went off for a last stroll in among the soft moss and a schoppen of white wine. She has now and again startled some great capercaillie and sending it flying and whirring down the glades.

When we returned from that prow into the forest we found the inn dark. Such people as may have called in had gone home; but we suspected that Franziska had given the neighbors a hint not to overwhelm us on our first arrival. When we entered the big room, Franziska came in with candles; black she brought some matches, and also put on the table an odd little pack of cards, and went out. Her uncle and aunt had, even before we went out, come and bade us good night formally and shaken hands all round. They are early folk in the Black Forest.

"Where has that girl gone now?" says Charlie. "Into that lonely billiard-room. Couldn't you ask her to come in here? Or shall we go and play billiards?"

Tita stares, and then demurely smiles; but it is with an assumed severity that she rebukes him for such a wicked proposal, and reminds him that he must start early next morning. He grows assent. Then she takes her leave.

The big young man sits silent for a moment or two, with his hands in his pockets and his legs stretched out. I begin to think I am in for it—the old story of blighted hopes, and angry denunciation, and hypocritical joy, and all the rest of it. But suddenly Charlie looks up with a business-like air, and says:—

"Who is that doctor fellow you were speaking about? Shall we see him to-morrow?"

"You saw him to-night. It was he who passed us on the road with the two beagles."

"What, that little fellow with the bandy legs and the spectacles?" he cries, with a great laugh.

"That little fellow," I observe to him, "is a man of some importance, I can tell you. He—"

"I suppose his sister married a Geheimer-Oberbaurath—what the dickens is it?" says this disrespectful young man.

"Dr. Krumm has got the Iron Cross."

"That won't make his legs any the straighter."

"He was at Weissenburg."

"I suppose he got that cast in the eye there."

"He can play the zither in a way that would astonish you. He has got a little money. Franziska and he would be able to live very comfortably together."

"Franziska and that fellow?" says Charlie; and then he rises with a sulky air, and proposes we should take our candles with us.

But he is not sulky very long; for Ziska, hearing our footsteps, comes to the passage and bids us a friendly good-night.

"Good-night, Miss Fahler!" he says, in rather a shamefaced way; "and I am so awfully sorry we have kept you up so late. We shan't do it again."

You would have thought by his manner that it was two o'clock; whereas it was only half-past eleven!

CHAPTER III.

DR. KRUMM.

There was no particular reason why Dr. Krumm should marry Franziska Fahler, except that he was the most important young man in Huferschingen, and she was the most important young woman. People, therefore, thought they would make a good match; although Franziska certainly had but quite a little money. Dr. Krumm was a tall, thin, young man, with long, fair hair, a tanned complexion, light blue eyes, not quite looking the same way, spectacles, and a general air of industrious common sense about him, if one may use such a phrase. There was certainly little of the lover in his manner toward Ziska, and as little in hers toward him. They were very good friends, though, and he called her Ziska, while she gave him his nickname of Fidele, his real name being Fidele.

Now on this, the first morning of our stay in Huferschingen, all the population had turned out at an early hour to see us start for the forest, and as the Ober-Forster had gone away to visit his parents in Bavaria, Dr. Krumm was appointed to superintend the operations of the day. And when everybody was busy renewing acquaintances with us, gathering in the wayside, examining guns and cartridge-belts, and generally aiding in the profound commotion of our setting out, Dr. Krumm was found to be talking in a very friendly and familiar manner with our pretty Franziska. Charlie eyed them with askeance. He began to say very disrespectful things of Krumm. He thought Krumm a plain person. And then, when the bandy-legged doctor had got all the dogs, keepers and beaters together, we set off along the road, and presently plunged into the cool shade of the forest, where the thick moss suddenly silenced our footsteps, and where there was a moist and resinous smell in the air.

Well, the incidents of the forenoon's shooting, picturesque as they were, and full of novelty to Tita's protégé, need not be described. At the end of the fourth drive, when we had got on nearly to luncheon-time, it appeared that Charlie had killed a handsome buck, and he was so pleased with this performance, that he grew friendly with Dr. Krumm, who had, indeed, given him the *Kampfschelle*. But when, as we sat down to our sausages and bread and red wine, Charlie incidentally informed our commander-in-chief that, during one of the drives, a splendid yellow fox had come out of the under-wood and stood and stared at him for three or four seconds, the doctor uttered a cry of despair.

"I should have told you that," he said in English that was not quite so good as Ziska's. "If I had remembered, yes! The English will not shoot the foxes; but they are very bad for us, they kill the young deer; we are glad to shoot them; and Franziska she told me she wanted a yellow fox for the skin, to make something."

Charlie got very red in the face. He had missed a chance. If he had known that Franziska wanted a yellow fox, all the instinctive veneration for that animal that was in him would have gone clean out, and the fate of the animal—for Charlie was a smart shot—would have been definitely sealed.

"Are there many of them?" said he, gloomily.

"No; not many. But where there is one there are generally four or five. In the next drive we may come on them, yes! I will put you in a good place, sir; and you must not think of letting him go away, for Franziska, who has waited two, three weeks, did not see a yellow fox not anywhere, and it is for the variety of a skin in a— I don't know what you call it."

"A rug, I suppose," said Charlie.

I subsequently heard that Charlie went to his post with a fixed determination to shoot anything of yellow color that came near him. His station was next to that of Dr. Krumm; but, of course, they were invisible to each other. The horns of the beaters sounded a warning; the gunners cocked their guns and stood on the alert; in the perfect silence each one waited for the first glimmer of a brown hide down the long glades of young fir. Then, according to Charlie's account, by a vent two or three deer like lightning—all of them does. A buck came last, but swayed just as he came in sight, and back came last, but swayed just as he came in sight, and back came last, but swayed just as he came in sight. Two more backed and made straight for the line of beaters. Two more did, and then an absolute blank. One or two shots had been heard in a distance; either some of the more distant stations had been more fortunate, or one or other of the beaters had tried his luck.

(To be Continued.)

Uncle Tom's Department.

A Little Snow Scene.

Tommy stands watching the fast-falling snow, Wondering what makes the wild "white wind" blow.

To Our Young Readers.

Christmas is coming, Hurrah! boys, hurrah! Is the song many of my young friends are singing, and preparations for a merry Christmas are being made.

And too much plum-pudding on the 25th of December renders necessary the rhubarb and magnesia, and the salts and senna, on the 26th.

TO STEW A STRAW.

Wash it well, and season it hot, Bind it and put it in the pot; Fry three onions, put them to it,

To my nephews and nieces—Are you anxious to become men of business? If so you will find good instruction in securing subscribers for the ADVOCATE.

Puzzles.

A CURIOUS LETTER. 113.— Friends sir friends stand your disposition I bearing a man the world is whilst the contempt ridicule are ambitious

THE APPLE TREE PUZZLE.

114.—How can ten apple trees be planted so that there will be five rows and four trees in each row? MARY MAYFLOWER.

RIDDLES.

115.—It is as high as all the stars, No well was ever dug so low; It is in age five thousand years— It was not made an hour ago.

116.—What word is that in the English language the first two letters of which signify a male, the first three a female, the four a great man, and the whole a great woman? THOS. RUSTON.

SQUARE WORD.

117.—My first is a river, its waters are clear; My second is sometimes very heavy to bear; My third is a town with scenery grand; My fourth was a garden in a beautiful land.

PUZZLE.

118.—A semi circle on a perpendicular meet, An article's my next you'll find; My first again you now repeat, Now add a letter of a separate kind, And then a consonant that's in the brine, My whole is a very useful article. FRANK LAWSON.



WOLVES.

119.—What is that which oft by lowly hands is sought, But which we do not seek for naught, And which we cannot do without? M. McMULLEN.

ENIGMAS.

120.—My first is part of my second, As farmers mostly know; My first to all is useful reckoned, As I'm prepared to show; And if the farmer thinks it best, Keep my whole among the rest.

121.—My first you will find the trapper has got, My next to exist will be found nevertheless, My third you will find in the poor man's cot, My whole will be found on a lady's dress. THOS. M. TAYLOR.

122.—They say my first is very bright, And what they say is true, But only through my second can My first be seen by you; My second would without my first Be far from being bright; My whole is what the workingman Welcomes with great delight. J. H. C.

Answers to Nov. Puzzles.

106. Fish, 107. Sigh, 108. Toast, 109. Parma-ram-ram, 110. ScarF, UsureR, Bella, MooN, Untertook, Lull, OBI, CannoN—Columbus, Franklin, 111. Time, 112. Saturn, Love, England, Eve, Petrarch. The initials form Sleep.

ANSWERS RECEIVED TO NOV. PUZZLES.—W. Thurston, Kimberley; J. F. Jacobs, New Brighton; Joshua Stribert, Albany, N. Y.; H. Crofts, McGillivray; Miss E. Smith, Berlin; E. J. Wells, Kincardine; R. S. Bethel, St. John, N. B.; Miss J. Hodgins, Biddulph; J. H. Fields, Omaha, T. S.; Mary Mayflower, Gloucester; Frank Lawson, Nilestown; T. M. Taylor, Eden Mills; M. McMullen, Harwich; J. H. Cross, Caledonia Springs; Thos. Ruston, Scrimville; Louisa Nicolson, Valleyfield, Q.

Natural History.

II.—AMERICAN FUR-BEARING ANIMALS.

The Brown Wolf is the fiercest and most carnivorous of the wild animals yet indigenous to America. It resembles a large lank-faced, ill-conditioned dog, having a straight tail. It varies somewhat both in size and color, according to the nature of the different localities in which it occurs, being larger and fiercer in more northern and unpeopled countries—feebler and of smaller size when surrounded by enemies and living in a state of continual fear and precaution.

The wolf, in a wild state, is a cowardly though cruel animal. He has sometimes been observed so stupefied by sudden fear as to be killed or secured alive without danger or difficulty.

At the same time, when pressed by hunger and assembled in troops during the winter season, they become formidable, both to man and beast, as our engraving represents. We know from ancient chronicles, and from various legal enactments and feudal tenures, how greatly the mother country was infested by wolves during the days of our Saxon ancestors; and that in the reign of Athelstane it was found necessary to erect a kind of retreat at a place called Plixton, for the protection of passing travellers.

The extirpation of wolves from England was imposed as a tribute by King Edgar upon the conquered Welsh. Ludwal, Prince of Wales, paid yearly a tribute of 300 wolves. When the deep and long enduring snows of winter have entombed the face of nature in their silent shroud, these creatures often suffer dreadfully from famine, and were they not for the most part as fearful as rapacious, they would assuredly prove most unpleasant. In a state of domestication the wolf can be regarded as nothing more than a dog of a somewhat anomalous and unusual aspect.

WHY FRANKLIN USED SIMPLE LANGUAGE.— Tradition has it that years ago, when Benjamin Franklin was a lad, he began to study philosophy, and soon became fond of applying technical names to common objects. One evening when he mentioned to his father that he had swallowed some accephalous mollusks, the old man was very much alarmed, and suddenly seizing him, called loudly for help. Mrs. Franklin came with warm water, and the hired man rushed in with the garden pump. They forced half a gallon down Benjamin's throat, then held him by the heels over the edge of the porch and shook him, while the old man said: "If we don't get them things out of Benny he will be pizened, sure." When they were out, and Benjamin explained that the articles alluded to were oysters, his father fondled him for an hour with a trunk strap for scaring the family. Ever afterward his language was very simple and explicit.

ANIMALS.

and most carn... indigeno... k-faced, ill-con... It varie... according to the... which it occurs... northern and un... of smaller size... living in a state... He wanders... ing and evening... h in a sufficing... s, field mice and... nals are not des... the female is in... numerous males... becomes her com... the young have... about to bring... sheltered and... nes with leaves... or hair from her... litter varies from... ng are born with... days the mother... ing carefully fed... two months, but... th week she dis... accustoms them... ls which she has... n observed that... never left alone... other of the pa... y lead them from... tiate them in the... e. In November... begin to wander

ld state, is a cow... animal. He has... served so stupefied... to be killed or se... danger or diffi... time, when pressed... ssembled in troops... ason, they become... man and beast, as... ents. We know... cts, and from va... ents and feudal... the mother coun... woles during the... nestors; and that... stance it was found... kind of retreat at... on, for the protec... the extirpation of... ed as a tribute by... Welsh. Ludwal... a tribute of 300... ng enduring snows... ce of nature in their... often suffer dread... y not for the most... y would assuredly... te of domestication... thing more than a... d unusual aspect... me and docile, that... ove of live poultry... ander where they... y and fondly with... ure from them the... owever, and when... al instinct, dogs ex...

IPLE LANGUAGE.—... go, when Benjamin... ng technical names... ming when he men... had swallowed some... man was very much... g him, called loudly... e with warm water... in with the garden... on down Benjamin's... heels over the edge... e, while the old man... things out of Benny... When they were out... t the articles alluded... dled him for an hour... g the family. Ever... y simple and explicit.

Song for Christmas.

Oh! dreary doth the wintry blast
Come o'er you snow-capped hill;
Close shut the windows—bar the door—
Keep out the blighting chill;
And let the song resound the hall,
And Christmas mirth begin;
The more of clouds there are without
The less of clouds within.
Now let the festive board be spread,
Leave summer's languid face,
And join the dance with airy tread,
With merry winter's pace;
Or throng around the blazing hearth,
As done in olden time,
When hypocrites were scarcely known,
And laughing was no crime.
I'll have no neighbours' heads called o'er,
No scandal is my guest;
And let us think, whatever they've done,
They did it for the best.
And let the merry loud round game
Fill up that want and dearth,
And all be youth and happiness,
And innocence and mirth.
Then let the festive board be spread,
Far, far, and wide around,
And let those most in need of all
Amidst our feasts be found;
Or throng around the blazing hearth,
As done in olden time,
When hypocrites were scarcely known,
And laughing was no crime.

—R. D.

Minnie May's Department.

Christmas

Competition for the prize Chromo this month, was very close—the competitors being far more numerous than on any former occasion. The first prize has been awarded to Mrs. H. C. Abbott, Wolfe Island; extra prize, Selma Meyer, Jordan.

As this is the time when preparations are being made to entertain our friends who are to assemble around the "merry Christmas board," a few words on the *modus operandi* of preparing a Christmas dinner will not be out of place:—

BILL OF FARE.

- MEATS.
Boiled Turkey, Roast Goose, Tongue, Roast Beef.
- VEGETABLES.
Potatoes, Turnips, Cauliflower, Cabbage, Onions.
- SAUCES.
Apple, Cranberry, Cherry.
- DESSERT.
Plum Pudding, Mince Pie, Plum Cake, Fruits, Candy, Nuts, &c.
- BEVERAGES.
Tea, Coffee, Chocolate.
- DIGESTIBLES.
Fun, Jokes, Conundrums, &c. &c.

BOILED TURKEY.

Fowls for boiling should be chosen as white as possible. Those which have black legs should be roasted. Wash well in warm water; if very dirty from the singeing (which never ought to occur), rub on a little white soap, which rinse off thoroughly. For the force meat, or stuffing, a great variety of materials are used. For reference, a list is appended:—

Substance—Flour, crumbs of bread, parsley, spinage, boiled onion, mashed potatoes, yolks of hard eggs, mutton, beef, suet or marrow, calf's udder or brains, parboiled sweet bread, boiled tongue.

Spirit—Common thyme, lemon and orange thyme, sweet marjoram, summer and winter savory, sage, bay leaf, burnet, lemon peel, lobsters, oysters, dressed tongue, pepper, allspice, mace, cinnamon, ginger, nutmegs, cloves.

The consistency of force meats is a somewhat difficult thing to manage, being either too light or too heavy. Pounding and mixing should be resorted to until all the ingredients are thoroughly incorporated. Force meat balls should not be larger than nutmegs; if for brown sauce, flour and fry them; if for white, boil for three minutes, putting them in boiling water. But for our boiled turkey, use this force meat:—Mince a quarter of a pound of beef suet, or marrow, the same of bread crumbs, two drachms (a medium-sized teaspoonful is about a drachm) of pulverized parsley leaves, a drachm and a-half of sweet marjoram or lemon thyme, and the same of grated lemon peel and onion chopped as fine as possible; a little pepper and salt; pound thoroughly together with the contents of two eggs; make what is left from stuffing the fowl into small balls, which boil and place around the dish when served. Put the turkey on in a clean pot, with soft water enough to cover it

well; the slower it boils the whiter and plumper it will be; skim off all scum as it rises. Boil from three to five hours.

How to Carve—Cut slices each side of the breast down to the ribs; the legs may then be removed, and the thighs divided from the drumsticks, which are very tough; but the pinions of the wing are very good, and the white part of the wing is preferred by many to the breast. The stuffing is usually put in the breast, but when truffles, mushrooms or oysters are put into the body, an opening must be made by cutting through the apron.

ROAST GOOSE.

When a goose is well picked, singed and cleaned, make the stuffing with about two ounces of onion (if you think the flavor of raw onion too strong, cut them in slices, and lay them in cold water for a couple of hours, or add as much apple or potato as you have of onion) and half as much green sage; chop them very fine, adding four ounces, i. e., about a large breakfastful of stale bread crumbs, a bit of butter about as big as a walnut, and very little pepper and salt (to this add half the liver, parboiling it first), the yolk of an egg or two, and incorporating the whole well together, stuff the goose; do not quite fill it, but leave a little room for the stuffing to swell. Spit it, tie it on the spit at both ends, to prevent it swinging round, and to prevent the stuffing from coming out. From one and a-half to one and three-quarter hours will roast a fine, full-grown goose. Serve with gravy and apple sauce.

Carving—The apron must be cut off in a circular direction, when a glass of port wine, mixed with a teaspoonful of mustard, may be poured into the body or not. Some of the stuffing should then be drawn out, and the neck of the goose being turned a little towards the carver, the flesh of the breast should be sliced on either side of the bone. The wings may then be taken off, then the legs. The other parts same as a fowl.

ROAST BEEF.

For a family of twelve, a sirloin of beef, of about ten or twelve pounds weight. If much thicker, the outside will be done too much before the inside is sufficiently cooked. It will require from three to four hours in a moderate oven. Slow roasting is as advantageous to the tenderness and flavor of meat as slow boiling, of which everybody understands the importance. Take care to arrange the meat so that it may not be heavier on one side than the other; put a little clean dripping into the dripping pan; baste it well as soon as put in, and every quarter of an hour until done. To brown and froth it, sprinkle a little salt over it; baste with butter; dredge it with flour; let it stand a few minutes in the oven.

VEGETABLES.

In cooking vegetables, remember that soft water should be used. If hard water only can be had, a teaspoonful of carbonate of potash may be added. They should always be boiled by themselves, and kept closely covered; throw in a little salt with the vegetables. For potatoes, only water sufficient to cook them done is necessary. Vegetables of the medium size are preferable. Onions need to be thoroughly cooked until tender, but not until the bulb falls into pieces.

The following recipes are from a reliable correspondent, and we have every confidence in recommending them:—

ENGLISH PLUM PUDDING.

Mix 1 lb. of suet with 1 1/2 lbs. of fine flour, 1 lb. of currants washed and picked, 1 lb. of raisins, stoned and a little cut, the rind of half a lemon cut as fine as possible, 1 nutmeg grated, 4 eggs beaten, a glass of brandy, a little salt and as little milk as will make a thick batter. Boil in flour'd cloth six hours. The best cooks decree rather in-temperate sauces:—Cold wine and sugar, a glass of sherry, two teaspoonfuls of grated sugar in a quarter of a pint of melted butter, with nutmeg grated on top.

EGG MINCE PIES.

Boil 6 eggs hard, peel and shred them small; shred double the quantity of suet; put to them 1 lb. currants, the peel of 1 lemon cut very fine and the juice; 6 spoonfuls of sweet wine, mace and nutmeg, 1/2 lb. sugar, a very little salt, 1 oz. each candied orange and citron. Make a nice light paste for them.

AN EXCELLENT PLUM CAKE.

Rub 2 lbs. of fine flour with 1 lb. of butter, mix it with 3 spoonfuls of yeast in little warm water and milk; set to rise in a warm place till light, then beat into it 2 lbs. of currants, 1 lb. sugar,

blanched almonds, 4 ounces; 6 ounces of raisins, stoned and chopped fine; half a nutmeg grated, a little allspice and cloves in powder, the peel of a lemon chopped as fine as possible, a glass of brandy, 1 of wine, 12 eggs, yolks and whites beat separately; add candied peel cut fine. Beat exceedingly well; put in a buttered pan; bake 2 hours in a quick oven, but don't burn.

BEVERAGES.

Tea should be treated as an infusion, and not boiled, as if grated sole leather. Coffee should always be made in a filter, and drunk from small cups, with two spoonfuls of cream, and sugar to taste. One cup of the pure beverage is sufficient.

Chocolate—To each square cake of chocolate allow three gills of boiling water. Grate the cake, or shave it down with a knife, and mix enough hot water with it to form a paste; put it into a tin pot, with the rest of the water, and let it boil until one-third reduced; stir it once or twice. Supply the reduced portion with rich, sweet cream; stir, and remove from the fire; serve as soon as settled, and hot; sugar to taste.

THE DIGESTIBLES.

I do not supply; they are to be furnished by the company. But if the above Bill of Fare is adhered to, it will go far towards making the company cheerful, and thus produce fun in abundance.

Domestic Brevities

CURE FOR NEURALGIA.

Take five of Judson's and four of Ayers' pills within three consecutive hours. These pills have given entire satisfaction when tried in cases of neuralgia.

CURE FOR CORNS.

Lay a piece of raw fat pork upon them. The corns will disappear in a few days.

LOSS OF APPETITE.

Take half a pound of valerian root and make tea of it. Take a wine-glassful at night, on going to bed.

CURE FOR CHAPPED HANDS.

Rub cold cream on them going to bed.

REMEDY FOR FOUL BREATH.

Eat a piece of burnt crust occasionally.

Bank st., Ottawa, Ont. MARY A. EVANS.

Fashion Items

The most fashionable furs this winter are dark and light otter, silver fox, lynx and monkey; the borderings for mantles are very wide.

Just now the hair is worn lower at the back than heretofore—generally *crepe* over the forehead, and somewhat higher on the top of the head. A very classical style of hair-dressing has of late been trying to make its way, but it requires such young, fresh faces, with such good features, that it is not likely ever to become general. Nothing can be simpler than the mode of proceeding:—The front hair can be curled or *crepe*, all the rest on the head is then drawn to the back, and twisted quite low at the nape of the neck, as seen on Diana and other statues. If the natural hair is not sufficient, a tail of false is rolled in with it, but it is prettier without frisette. Bows trimmed with lace are generally worn in the hair, red being the leading color.

Skeleton Leaves

DEAR MINNIE MAY:—Having read your department with much interest for some years, and receiving so much benefit from it, it affords me pleasure to assist others when I can do so. I see your correspondent "H" asks information on how to make skeleton leaves. I have found this plan give satisfaction:

Skeleton leaves may be made by steeping leaves in rain water, in an open vessel, exposed to the air and sun. Water must occasionally be added to compensate loss by evaporation. The leaves will putrefy, and then their membranes will begin to open; then lay them on a clean, white plate, filled with clean water, and gently take off the external membranes, separating them cautiously near the middle rib. When there is an opening towards the latter, the membranes separate easily. The process requires a great deal of patience, as ample time must be given for the vegetable tissues to decay, and separate time to pick them when they fall off the trees.

East Saginaw, Nov. 10, 1875. MRS. H. REEVE.

Butter Making and the Canadian Butter Trade.

It is not more than ten years since French butter has been considered an important article of commerce in the London market. The reason it now occupies such an important position is mainly on account of the manner in which it is handled, and in our opinion their method is exceedingly beneficial to the farmer, shipper, provision merchant and retailer, and what is more essential still, it pleases the consumer. In most of the principal towns in Normandy, France, there is a day appointed in each week a butter market, and on these occasions the buyers meet the sellers, and from 25,000 lbs. to 50,000 lbs. will change hands in lots of from 61 lbs. to 80 lbs. each, which are brought in by farmers' wives. The buyer goes round and makes his selections at the prevailing prices for that day; he then puts his purchases into wicker baskets holding about 200 lbs. each, and takes it home, probably a distance of ten or fifteen miles. The next day it is kneaded or worked by machinery, which is simply a perfect process of washing in clear spring water, to get the butter milk and other impurities thoroughly extracted. It is then colored according to taste, the general coloring used being a compound of cochineal, alum, and rose water. It is next salted at the rate of 5 lbs. of salt to 100 lbs. of butter, and again washed, so as to liquefy the salt, and put into the firkins. This butter, for instance, will be bought first hand on Monday, the following Monday it will be in the London Market, and invariably sold out by Wednesday.

We will take the Cork market as an example of the Irish method of manipulation. The farmers bring the butter into market, where the buyers attend, in quantities of from one to twenty firkins. Some weeks there will be 12,000 firkins in this market alone. The butter is brought before being classed. There are about five inspectors who class the butter, and it is graded into six different qualities. By this method the buyer is apt to lose unless he is a good judge, and will probably have first, second and third class butter when he only wants first. When the butter is graded the firkin is branded with an iron, and the quality scribed on. No butter is allowed to go out of Cork harbor unless it bears the Cork scribe on the firkin; thus English buyers are very safe in ordering whatever quality of Irish butter they require, at the prevailing prices of the agents in Cork, being pretty sure to get the quality they order. If this system were adopted in Canada it would be of the greatest benefit, and would induce our dairymen to make a better article than they do at present; but with the present mode of manipulation, an English buyer would not be safe in ordering any large quantity at such and such quotations of our buyers here.

The Dutch system is very inferior to the foregoing methods, and would be no criterion for Canadians to go by. Their butter is a very inferior article, not having the body that Irish or French butter has. This is in consequence of the low, marshy pastures, which are flooded over by the sea at certain seasons of the year, giving fifty per cent. of their butter a fishy taste, especially during the winter season. Each dairyman makes about fifty or one hundred pounds per week, and brings it to market at once, after which it is immediately shipped, steamers going to London twice a week, carrying from 3,000 casks to 6,000 casks each. This butter is consumed within a week of shipment.—*Ingersoll Chronicle*.

NOTE.—Importation of cattle from England has been prohibited by order of the Secretary of the Treasury (United States), in consequence of the prevalence of the hoof and mouth disease in that country.—*Am. Paper*.

This is a country where the Texas fever is prevalent among cattle, and where, it is even said, there are cases of the hoof and mouth disease! In Canada we know of such diseases only by report, and we should endeavor to prevent their being introduced by any means into the country.

We beg leave to call the attention of our readers to the advertisement of the Weekly Free Press in this month's issue. It is a first-class family paper, and devoted to the best interests of the country—subscribe for it. Also the Weekly Advertiser, an organ of the present administration. Send to each for sample copies.

Railroad Charges.

To the Farmer's Advocate.

I believe that you are always ready to espouse the farmer's cause. I wish you would try and get fair play for Canadian farmers in regard to the railways, as nothing tends to our injury more than the gross insults offered to us by these companies. For instance, I have just shipped a car load of potatoes to Toronto from Mount Brydges Station. The Railroad Company charged me \$36 for the car. This same Railroad Company will take a car from Detroit to Toronto for \$29. The distance is 93 miles further from Detroit to Toronto than from Mount Brydges, yet the charge is \$7 less for the long distance than for the short distance. This tends to enhance the value of land in the States to the depreciation of Canadian lands, as we cannot realize in our own markets as much as the Americans can. We have paid the bonuses on these railroads and should have every advantage accorded to us. I wish to ship apples to Toronto, and they ask me 30 cents per barrel. A barrel will not exceed 150 pounds. They charge the Americans less than 10 cents per 100 pounds. Perhaps they wish to divert the trade of our country into the United States, and make them do all our business. I am much pleased with your paper, and consider it the real farmer's friend, and wish you every prosperity.

Yours,

An old Friend and Subscriber,

D. LETCH.

Strathroy, October 22.

The above question should be looked to by the railroad companies and by the legislature. It would be a good subject for the Grangers to take up, as we know Canadians are not receiving fair play. The Express business and Pullman car question should also be discussed, as we farmers are fattening two large leaches on our pockets by having them. The railroad companies say they do not pay. They never will pay if they allow the coaches to draw their profit from them the way they have done. The farmers should not suffer for the management of railroad officials.

DEAR SIR,—

I would like to know through the columns of the *Advocate* (if you can tell me in that way) the weight of the fat Hereford cow exhibited at the Western Fair and spoken of in your 1st number. Also her age, and if a grade cow, as fat and heavy, would stand an equal chance of getting a prize for fat cow as a thoroughbred?

By giving the above information you will much oblige

E. D. MILTON.

Ridgetown, Nov. 5th, 1875.

DEAR SIR,—

In reply to yours of 19th, respecting Mr. E. D. Milton's note enclosed in same, I beg to say that the heifer cow exhibited at Central Exhibition, Guelph, Provincial at Ottawa, and Western at London by Mr. Geo. Hood, is estimated to weigh 2,100 lbs, was bred by late Lord Borwick, calved Nov. 12th, 1860, imported by Frederick Wm. Stone, of Guelph, in October 1861, and has bred ten calves, one of which, Sir Charles, was sold for one thousand dollars when five years old, and at seven years old weighed 2,700 lbs., and was active and useful, and the past three years at the head of Mr. Miller's herd, Beecher, Ill., U. S.

Respecting grades having an equal chance, there could be no doubt, as judges are appointed to award the prize to the best fatted animal, and should do so to the best of their judgment, taking all points into consideration, irrespective of breeds or anything else but the animals they are called upon to judge.

FREDERICK WM. STONE.

Morton Lodge, Guelph, Ont.

SALE OF VALUABLE PROPERTY.—We see announced in the daily papers the sale of Bow Park, the well-known farm of Hon. George Brown, to some English gentleman. We trust the same spirit of enterprise for which the late proprietor was distinguished will continue to be manifested for the future in Bow Park.

Now that the busy season is over, and farmers have leisure hours for reading, we invite their attention to our catalogue of books in this issue, which may be obtained for cash, or by securing subscribers for the *Advocate*. See Prize List.

Cross-Breeding Cattle.

It is astonishing how many inferior cattle continue to be raised in the country, and how little foresight and knowledge the generality of farmers possess on the subject of stock breeding. Many are the farmers whose entire stock of young cattle would not sell, when three years old, for half the value of the food they have consumed in that time. Of this fact many have now become sensible, and have sold off every passably good animal on their farms, even to their cows, the only part of their stock that could be made available as a basis on which to commence future operations, with a view to improvement.

Good cattle are now high in price. A good cow, that has been well fed and milked fairly, will command anything in reason. So will young heifers with a cross of shorthorn blood in them. But this very circumstance does not seem to convince farmers that their best policy is to hold on to the good they have got, and endeavor to make it still better by a further use of thorough-bred bulls. How many are there among them, who, to obtain grade heifers, worth from \$10 to \$20 more than their dams, will subscribe liberal amounts to their agricultural society towards the buying and keeping of a first-class shorthorn bull, or pay an enterprising neighbor, who purchases and keeps one at great cost, the moderate sum of \$5 for each cow put to that ball?

For all practical purposes of the dairy or the butcher, it will be found that cross-bred cattle can be more profitably raised by farmers than the thorough-breds. But it is necessary at first to have cows of good form and propensity to take on flesh kindly, which is indicated by moderate size, compactness and levelness of form, a straight, broad back and a thin tail, and a soft skin well covered with fine hair; then we want good milking quality indicated by a broad forehead, small muzzle, bright and kindly expression, udders full and large, yet not fleshy, with the milk veins well developed, and thighs somewhat wide apart; and lastly, we must have good constitutions, which also insure early maturity, indicated by broad, deep chests, and ribs well rounded out behind the shoulder. In selecting a bull it must be remembered that what is most to be aimed at in breeding upwards from ordinary stock is to stamp the characteristics of the breed upon his progeny, and that the further back his pedigree can be traced, provided it can be depended upon, and traced through animals successfully bred through one strain, or by careful and reliable breeders, the greater his value, and the more likely he is to bring progeny of a high character of excellence, even though he may be himself deficient in some points.—*Colonial Farmer*.

Commercial.

It is difficult at present to form any opinion of the prospects of future prices of breadstuffs, the reports are so fluctuating and, in some instances, conflicting. There has been, on the whole, little change in prices for some time. Though the main crops of Great Britain have been much below the average, and part of them gathered in in bad conditions, the supply in the markets has been sufficient to meet all demands. Add to this the surplus supply 1874, and you have the continued low prices accounted for.

FRANCE.—The weather on the whole has been favorable for farm operations, and wheat sowing has been almost completed. The wheat market exhibits some dullness, though in Marseilles prices remain unchanged.

DANZIN.—Market without much change in prices. Old wheat in good demand; barley unaltered; rye easily bought for home consumption.

LEIPSIC.—Prices improved—trade on a firmer footing. Supplies arriving large.

ENGLAND.—The Liverpool breadstuffs are unchanged.

LIVERPOOL, Nov. 22.—Flour 24s 6d to 25s 6d; Red Wheat 9s 2d to 9s 10d; Red Winter 10s to 10s 4d; White 10s 8d to 11s; Club 11s 2d to 11s 6d; Corn 31s 9d to 32s; Barley 3s 6d; Oats 3s 4d; Peas 41s to 41s 6d; Pork 100s; Cheese 5s.

MONTREAL.—Flour, receipts, 478 bbls; prices, \$3.40 to \$4.00. **TORONTO.**—Barley firm and in good demand; No. 1, 80c; No. 2, 71c; No. 3, 61c. Wheat is inactive and heavy; buyers bid for spring wheat. Flour, market dull—\$1.40 to \$1.90.

NEW YORK.—Wheat, quiet and unchanged—\$1.15 to \$1.37, according to grades.

CHICAGO.—Wheat easier, \$1.06½ to 1.07½. Corn, 47c to 51c. Oats, 39c to 39½c.

LONDON, ONT.—Wheat, bid, \$1.65 to 1.75 per cental; spring, \$1.50 to \$1.60. Barley, \$1.10 to \$1.20. Peas, \$1.10 to \$1.15. Oats, 90c. Corn, \$1.10 to \$1.20. Rye, \$1.05 to \$1.10. Hay, per ton, \$12. Dressed Hogs, \$7.00 to \$7.50. Potatoes, per bag, 45c. Cornmeal, \$4.00 to \$4.50. Turkeys, each, 50c to \$1.00. Geese, 40c to 60c. Robt Butter, 29c to 22c per lb. Crock butter, 18c to 20c. Reg Butter, 16c to 18c. Cheese, 11c to 11½c. Flour, per 100 lbs, \$3.00 to \$4.00. Oatmeal, \$3.00 to \$3.25.

Patrons of Husbandry.

Meeting of the Dominion Grange.

THE WORTHY MASTER'S ADDRESS.

The Dominion Grange, Patrons of Husbandry, met in the lecture room of Shaftesbury Hall, October 26th. There were present forty-seven delegates from Division Granges, also eleven officers of the Dominion Grange, and about fifty patrons from subordinate Granges. Twenty-one Divisions were represented.

Worthy Master W. Hill, after opening the Grange, gave a short address, congratulating the members on the great progress the order had made during the past year, their being now 274 Granges, comprising several thousand members, compared with 44 of last year, with 1,300 members.

During the evening session, B. J. Case, Master of the New Hampshire State Grange, and member of the Executive Committee of the U. S. Grange, was introduced and fraternally received, and when asked to address the Grange did so in a very forcible and instructive manner, expressing the wish that the Dominion and National Granges might cooperate for the good of the order. After which, Worthy Master S. W. Hill delivered his annual address as follows:—

PATRONS.—We have left the busy and varied scenes of our homes, and have laid aside for a while the implements of occupation, to congregate here in a representative capacity to legislate for the interests of our order; and in congratulating you on the happy results of our congregation in Canada, I can do no less than call your attention to the many blessings that have been bestowed upon us in life and in health, as well as in basket and in store; for all which the heart's deepest devotion is due to Him who can bless or blight our prospects.

In my address at our last annual meeting I called attention in an especial manner to our home surroundings and I still wish to impress upon the members of the Grange the importance of enhancing the appearance and pleasures of our homes, for in that, I believe, depends many of our happy successes in life, and it is a powerful instrument placed in our hands to strengthen our attachments to our occupation and the attachment of our children to the occupation of their fathers, and if any were led by ambition or otherwise to leave their homes, their reflections would be associated with the days of their youth, and would prevent them from falling into error; for what is there a man looks back to from the scenes of struggling life with purer and holier feelings than the happy home of his childhood?

As has been stated by our worthy secretary in his circular to subordinate Granges, the Dominion Grange is morally, numerically and financially a success, and with his statements I can but compare the present with the past. At the last meeting of the Dominion Grange we had but forty-five subordinate Granges in our jurisdiction; we now have two hundred and forty-seven subordinate Granges, twenty-two Division Granges, with a manifest increase of interest among the farmers throughout the country, to enlist in the cause that so immediately affects their occupation. Granges have recently been established in Nova Scotia and New Brunswick, thus enlisting in our jurisdiction the Grange interest of the four Provinces. The order has now arrived at an important point in its history in this country. We will find many, who are opposed to us, putting forth every effort to stay our progress, and as soon as we are deemed of sufficient strength by others to be made available, we will be sought after to gain for themselves influence and position; therefore it becomes each member to guard every avenue of the Grange against all such intruders, where it is prompted by selfish motives, keeping in view the fact that we are bonded together for a higher and holier purpose than to be the instrument in the hands of designing men. The Grange has its work to do. We shall eventually ask for the protection of our interests, equal to other interests of the country, as well as to elevate the farmer's occupation and lead his mind to a different train of thought. Many questions of importance will be brought before you, and I trust your deliberations thereon will be marked with dignity and justice, and I would call your attention to the importance of devising some plan to assist and inter-est subordinate Granges, believing it to be a duty incumbent upon this Grange to extend that paternal care as far as possible. It would not only add

strength to the order, but would beget a uniformity in sentiment, and place the organization upon a sound working basis. And I would recommend to all the members of the order a close adherence to our declaration of principles. The desire is still apparent in all our subordinate Granges for a recognition by the National Grange of the United States; and, as delegated members from those Granges, we acknowledge said National Grange as the parent institution, and will use all honorable means for amicable and fraternal relations. As that Grange has been successful in binding more closely the agricultural interests of the country, so fraternal union of the two Granges might be instrumental in more closely uniting the well known dependent relations existing between the two countries.

In thus reviewing the happy success of the Grange, we may rejoice in our strength, but temper it with gentleness, and a spirit of love for all mankind—a love that shall perpetuate tranquility, and leave the boundless and rapidly increasing resources of the country at liberty for its future development. Then let no man laud his occupation above another. Still, if any one occupation or mode of life is superior to another, it is that which in its very nature furnishes the motive power that gives impetus to all others—and this one we must accord to the rural life. I admonish you to cherish the highest regard for the other arts and sciences, as well as legitimate trade, remembering we are all parts of a great whole, weak when taken alone, strong when united in the bonds of social brotherhood. We are dependent upon each other; for, as the sons of science are scouring every heath, and prairie and wilderness, to see if some new grass lies hidden in some unexplored glade, if some rude stock of the forest, can offer a new fruit to the hand of culture, I speak of these things not only to assure those who are opposed to this organization, that we wage no aggressive warfare upon their interests, but to incite an interest in the members of the Grange, as well as the farmers of Canada, to a better protection of their real life; in itself peaceful and happy—free from the corroding cares and anxieties of trade and commerce, free from the harassing toils of professional life—conductive in itself to virtue and religion. Containing in itself the germs of usefulness, that gives an impulse to all other interests. Shall we not then strive to elevate it to the high position to which its merits entitle it? How shall it be done? I answer by adhering to our principles, "and laboring to develop a better and higher manhood among ourselves." To enhance the comforts and attractions of our homes and strengthen our attachments to our pursuits, to foster mutual understanding and co-operation. We may meet with difficulties and disappointments. These are but impediments thrown in the pathway of life. Let none despond, but toil on; and, as we gain knowledge, we will gain power to triumph over the physical difficulties that lie in our path.

"Pause not in fear; French's desp'nding, servile view— What'er thou wilt thy will may do; Strengthen each manly nerve to bend Truth's bow and bid its shaft ascend! Toil on!"

Be firm of heart; By fusion of unnumbered years, A Continent its vastness rears! A drop, 'tis said, through flint will wear; Toil on, and Nature's conquest share! Toil on!"

During the morning and evening sessions considerable important business was transacted relating to the order.

O. H. Kelley, Secretary of the National Grange, says that Granges are being organized now at the rate of about eighty per month; that would be an increase of about two thousand four hundred members for every thirty days.—Ohio Farmer.

At one time the Order of Patrons of Husbandry seemed to be on the wane as to interest in Iowa, but the tide seems to have turned and the Secretary reports 912 more members for the June quarter than were reported at the March quarter.

Mr. B. F. Bryant, a member of Shelby Grange, No. 20 of Shelby county, Ky., lately had his wheat stacks burned by an incendiary, and, as he could ill afford such a loss, the Grange made up, by contributions of wheat and money, about enough to cover the loss. This exemplifies a species of insurance that exists among Patrons.—Louisville Courier-Journal.

Patrons of Husbandry News.

The National Grange is in session at Louisville this week. Officers are to be elected for the next three years, and action will be taken on a number of very important subjects. Probably the future prosperity of the Order will be more affected by the action taken than by anything done in the past.—W. Rural.

In all, ninety-two Granges were organized in the United States during October. This makes a total of 306 in three months.

The position of official organ of the State Grange of Louisiana has been resigned by Our Home Journal, which, however, offers its columns freely for any matter of general interest.

The Rural New Yorker thinks the social and material advantages gained through the Order are sufficient to secure its perpetuity. If it fails at all, it thinks the reason will be found in its attempting too much and having too much centralized power. It thinks the arguments in favor of simplifying the ritual and dispensing with as much machinery in the Order as possible, are sound.

The Chicago Times thinks the Order has done great good socially and considerable in co-operation. It suggests that the National Grange meetings are a little too expensive; that the members should give their time during attendance at these meetings and only be paid actual expenses, and that mileage be not allowed the wives of members. It advises the National Grange to recommend "honest money," and oppose a tariff for benefit of manufacturers. It also says:—"To our mind, the great mistake of the patrons has been in trying to regulate matters over which they have no control, and in paying no attention to abuses which they could correct. They have sought to regulate the carrying trade, but have shown no concern about the character of the produce that was transported. They have shown up the frauds of commission merchants, but have covered up their own frauds in relation to the goods consigned to them."

The Patrons in the vicinity of Otterville, Mo., have a co-operative store, with a cash capital of about \$3,000. It made a dividend of ten per cent. out of the net profits on the first six months. The stock is owned by Patrons in shares of ten dollars each, no Patron being allowed to own more than ten shares.

The Executive Committee of the Missouri State Grange earnestly urges the National Grange to so amend the constitution that all fourth degree members shall be eligible to any office in either the County, State, or National Grange, and also to any of the degrees known to the Order.

The Rural World says the main object of the Order of the Patrons of Husbandry has been, and is, to encourage and advance education in all branches of agriculture, and to elevate the occupation of the farmer to its true position among the productive interests of the world.

What Next?

Now that the granges have been organized to so great an extent, and in many instances have initiated nearly all the farmers within their jurisdiction, is it not time to think of enlarging its scope in accordance with the original design of its founders. On page 24, of Brother O. H. Kelley's History of the Order, we find the following:

As soon as lodge work is over, open the doors and admit the public, or have regular evenings for the public to be present, to listen to lectures or discussions, and have these frequent—once a week if possible. Let the Department of Agriculture send out the most capable and talented men in the county, to lecture before the grange upon horticulture, etc., giving illustrated lectures. Let each grange have a fair every fall, and require every member to exhibit at least one bushel of some kind of produce. This to be the property of the grange, and to be given to the poor under its charge.

We take pleasure in referring to this subject, as we believe it to be an essential feature and one which, if rightly managed, will result in much good. The lecture should be followed by an informal off-hand discussion, and a brisk fire of cross questions would do much to eliminate truth from error, and it would be highly interesting to the audience. As the season of the year has arrived when a lecture course should be instituted, we say let this subject be taken up and considered and acted upon, and let it be at least one answer to our pertinent inquiry of what next?—Rural World.

New Granges.

- 243 SAUSLEY.—Master, David Spence, Whittington; Secretary, James A. Spence, Whittington.
- 244 THORNDALE.—Master, Robert McEuffer, Thorndale; Secretary, George F. Bryan, Thorndale.
- 245 MOUNT PLEASANT.—Master, Henry Crews, Napanee; Secretary, Ira E. Groons, Napanee.
- 246 USION.—Master, Henry Wilcox, Selby; Secretary, Ira Higgins, Selby.
- 247 WEST ZORA.—Master, James Smith, Embro; Secretary, James A. Ross, Embro.
- 248 MANTICOK.—Master, John Lindsey, Manticoke; Secretary, Martin Buck, Jarvis.
- 249 MITCHEL ROAD.—Master, Wm. Sterrit, St. Mary's; Secretary, Thomas Epplet, St. Mary's.
- 250 ELM LEAF.—Master, Robert Coplin, Teeswater; Secretary, Robert Hutton, Teeswater.
- 251 DUFFIN'S CREEK.—Master, John Height, Pickering; Secretary, Enos Reinmer, Pickering.
- 252 THUSTLE.—Master, Robert Jamieson, West Lorne; Secretary, Duncan Carmichael, West Lorne.
- 253 VICTORIA.—Master, Robert Wilkie, Rond Eau; Secretary, Oliver Lanson, Rond Eau.
- 254 CRYSTAL STRAW.—Master, John Grearson, Ravenna; Secretary, James Salter, Ravenna.
- 255 ROSE OF THE WEST.—Master, A. A. Campbell, Lawrence Station, Secretary, Mungo McNabb, Cowal.
- 256 MOUNTAIN VIEW.—Master, W. J. Block, Epping; Secretary, Wm. Dinkall, Epping.
- 257 SIMCOE.—Master, Wm. Todd, Simcoe, Secretary, E. C. Carpenter, Simcoe.

Patrons of Husbandry.

The unprecedented success of our Order, which now numbers two hundred and fifty Granges, with a membership of nearly fourteen thousand, is such that must inspire in the mind of every Patron feelings of pleasure and satisfaction. We are now standing upon a firm foundation—a foundation supported by fourteen thousand of the agriculturists of Canada, whose hearts are in the cause. Our principles are before the people; we ask for them a careful examination. We are established for a purpose, and that purpose is to advance our interests, and at the same time the interests of all mankind. As agriculture is the rock on which the business of the country is built, it requires no argument to prove that whatever will be of advantage to the agricultural class will be of equal advantage to all others. The farmers of Canada are now on trial; the question is now to be solved—Are we able to discuss and master the questions which are so closely connected with our social and material advancement? Can we, as tillers of the soil, increase our profits and multiply the rewards of labor by organization and co-operation? Can we improve our social and intellectual capacities by the opportunities offered for a more frequent interchange of ideas and opinions, and the salutary influence of fraternal organizations? These are questions the future is to settle, and under such favorable auspices as are now before us, the experiment cannot fail—must not fail. The noble structure that we have reared will stand for ages, and under its shadow will be seen the ripened fruits of our labors. But to accomplish these great results we need the untiring energy, the unabated zeal, the hearty co-operation, of all our members, and with this the Grange will be a power to be felt. The past we will leave, the future is in our hands; let us now look around and see what we want, and then work together to accomplish the end. We require nothing unreasonable; we ask for the legitimate fruits of our labors; we ask to be relieved from burthens that tax our energies and earnings without compensation; we ask to be protected from the unsparing hands of monopolists; and we ask for equal protection upon our interests that are awarded to others. Patrons, in view of the important subjects before us, permit me to impress upon your minds the necessity of pressing forward with energy to the ultimate success of our work.

W. PEMBERTON PAGE,
Secretary Dominion Grange.

In a late circular the Executive Committee of the Missouri State Grange, very truthfully says: "There are many professional and trading men, and even some of our own brethren, who seem to think that the mission of the Grange is to fight everything and everybody. Never was there a greater mistake. If any body of men on earth mean 'peace on earth and good will to men,' it is the Grangers. We desire the prosperity of all good men. We have no antagonism to any honest calling, trade or profession. We want all to flourish and prosper, but we do not want them to be our masters. While other trades and professions are prospering, we want the farmers to prosper also. We want the 'man who holds the bread' to reap the fruits of his own labor, and not to have them go mainly into the pockets of the drones of society."

Granges and Leagues.

In a previous number of the ADVOCATE we referred to the Farmer's Leagues in the Maritime Provinces, and the great advantages of such a system to farmers. In one respect, at least, their working is similar to that of the Granges—their association is for their mutual improvement, and for their advancement in agricultural science and practice.

Under the heading, "Granges and Leagues," the *Colonial Farmer*, Fredericton, N. B., referring to those institutions, says: "Let the farmers of this Province stand together and they will be respected. Let them determine to maintain their independence in all matters—socially and politically—and there will soon be a change for the better." The *Colonial Farmer*, recopying an article from the *Montreal Star* on this subject, continues: "In the article alluded to the writer has referred to the political aspect of the New Brunswick Leagues, but does not state the matter altogether correctly;" and promises to refer to this part of the article in its next issue. When this promised reference is received we shall be able to compare the associations more closely. From what we know at present, it is our opinion that there is little to hold back the Leagues from becoming Granges.

The article referred to by the *Colonial Farmer* we give abridged. The relation of the Dominion Grange to politics will be seen in the Constitution of the Dominion Grange, republished in the supplement. It is definitely laid down, and the lines so plainly delineated that they can hardly be mistaken.

From the *Montreal Star*.

"AN AGRICULTURAL PARTY.—Within the last two years the farmers in portions of Ontario and a few localities in this Province, have been forming 'Granges,' or associations of agriculturists, somewhat after the system which is beginning to spread among the farmers of the United States. That these associations are gaining rapidly in popularity may be inferred from their increase in numbers from 24 in June, 1874, to 107 in June, 1875, in the Province of Ontario alone. The principal object of these associations is the promotion of a better system of agriculture, by enabling farmers to meet often, compare notes and make suggestions, as well as discuss public affairs, should circumstances suggest a necessity therefor. What Boards of Trade perform for cities, the Granges will probably attend to in the country, though their chief care will be to discuss matters connected with the appliances suitable for resuscitating worn-out soils, stock raising, butter and cheese making, and the various matters pertaining to husbandry. Although by far the greatest of our industries, none has, in the past, been so much neglected as agriculture, and there can be few more promising signs for the future of the country, than the movement toward the formation of Granges, and the determination at which the farmers appear to be arriving of looking after their own affairs and the interests of agriculture more vigilantly than heretofore. Hitherto the farmers have been treated to some extent like children. Governments have granted them aid, county and provincial exhibitions have been encouraged, and prizes offered for the best managed farms, without effecting any important benefits and possibly doing harm, by inducing the farmers to look less closely after their own affairs, which others appeared to be looking after for them."

[We do not acknowledge that the Government of this Province has treated us wholly as children. Our spirit of independence would revolt from such treatment; though in some matters they have been rather too much inclined to do for us what we would better do for ourselves.—Ed.]

"Mr. Barnard, Immigration and Colonial Agent, says, 'These Agricultural Societies have been in existence since 1818, in one shape or another. They have cost the country over a million and a half of dollars for annual grants alone. What results have they given?' This gentleman affirms in the most positive manner, that our Agricultural Societies have not yet produced the beginning of a general and gradual improvement amongst the mass of farmers. Mr. Barnard again reports to

the Government thus, after visiting most of the French-Canadian part of this Province: 'I have visited parishes which at one time were amongst the most fertile in the country; on farms which produced wheat with an extreme abundance for many years, nothing will grow but thin oats; the ditches are not kept up, water lies on the meadows in the fall, and consequently a considerable proportion is destroyed with the winter frosts. The stock is very badly wintered, and it has generally no better food in summer than the miserable weeds which grow on the hard baked ruined soil. The manure is as poor as the stock which produced it, and before any benefit is derived from it, nearly three-quarters of its value has been washed out or dried away, and consequently lost.' He concludes: 'Finally, Mr. Commissioner, it must be admitted, however reluctantly, that our agriculture suffers beyond all expression, and that it is high time to take the most energetic measures, if we intend to put a stop to this state of things, which is ruining the country and draining away its population.' With such an official statement before them, showing the effect of long and persistent efforts to foster agriculture by Government grants of money and Government inspection, the farmers deserve credit for adopting the measures necessary for trying how far union, discussion and efficient organization will go toward elevating themselves and their great industry to a higher position than that yet occupied. Though it is not likely that so sad a picture of worn out soil, and neglected and ruined agriculture, could be drawn of any other portion of the Dominion than the old French settlements referred to by Mr. Barnard, yet deterioration has been going on elsewhere. In Ontario, Nova Scotia and New Brunswick, there are many old farms not nearly so productive as they once were; and to restore such to their former fertility, by intelligent and careful husbandry, is the best work wherewith chiefly to occupy the attention of the Grangers and members of Leagues, who can, in this way, add immeasurably to the wealth of the country. In laboring to renovate the exhausted land, to improve the breeds of stock of various kinds, to ameliorate the quality of dairy produce and add to the quantity, and generally to promote the agricultural interest by the diffusion of intelligence and otherwise, the farmer's associations have a noble work in hand in which they will have the sympathies and good wishes of the entire community.

"At a New Brunswick meeting, Mr. Fairweather, one of the speakers, alluded to the political views of the League, laying down the motto 'Agricultural men to represent agricultural interests.' He urged his views, taking the ground that the agricultural interest is unfairly represented in the Legislature. On this head he said: 'The farmers own this country—have developed its agricultural resources; they number three-fourths of the electors of the country, and bear the same proportion of its burdens, and the question suggests itself, Is this body adequately represented? Should the advice of orators imbued with Mr. Fairweather's views be generally followed, there will be a wonderful breach made in the old parties before another general election for the Dominion is likely to take place.'

Sickly Granges.

We believe that the Grange should be placed in the hands of good, sound, careful farmers, and when organization cannot be effected among men of such a class, it is better to wait. One source of weakness in many States has been the insane desire to get Granges organized regardless of the material composing them. When a Grange is organized with all classes of men in it, or when it has enlisted only the narrow minded or visionary, its career is generally short or uncertain in its results; but if founded on solid rock, if started by honest and intelligent farmers whose character is a guarantee of good work, it will invariably develop into an institution of great usefulness. We urge all deputies to guard carefully the gates, so that the start be made good. Take in only farmers, and get the best farmers of the neighborhood. The Grange, if properly constituted on the start, will take care of itself. It has freedom to take in such as will do it good, and power to reject such as come with self design.—Ed.

More fall wheat will be sown in Kansas this season than ever before. The acreage will exceed that of last year full twenty-five per cent. The drill is being used extensively—the best and only way to insure a crop.

The Grange as a Reformer.

Something more than a mere change of men or of parties is necessary to reform the abuses of government. We must place in office men who have been educated in principles of honesty, who have not been themselves corrupted by the extravagance and vicious practices that have of late characterized public men of all parties. To give business its proper direction, men must be taught to aim at the highest standard of integrity, to make fair dealing their rule in all business transactions. The cause of temperance will be very little promoted by lecturers who sympathize with the movement only because they can make it pecuniarily profitable, or by showy "reform" movements which are effective only while a temporary popular excitement continues, but by teaching men purer principles, and constantly surrounding them with such influences as will tend to make them better.

The Order does not simply demand reform, nor appeal to popular enthusiasm, but it promotes it by keeping before its members at all times its cardinal principles of honesty in all business transactions, both public and private, and uprightness in all the relations of life. It is based on true principles of political economy, not only demands equal rights for all without making war upon any useful class. The working of the Order elevates and cultivates the minds of its members, and makes them more capable of understanding the workings of government, conducting intelligently the different departments of business, and exerting a useful influence upon their fellow-men. No man can belong to the Order, attend its meetings and thoroughly understand its principles without being a more intelligent citizen, more upright in his business transactions and more useful in society. Thus besides improving the condition of farmers, the Grange has already become a vast power to benefit mankind.—*Dirigo Rural.*

At the annual meeting Mr. Chase, a member of the Executive Committee of the National Grange of the United States, was introduced by the Worthy Master of the Dominion Grange, and gave an interesting address and some valuable information regarding the Order in the United States. He said a desire was felt by some members of the Order in the States to reciprocate with the Canadian Order. He did not doubt but a friendly relationship would be soon brought about, and that such would be of mutual advantage. He stated that the Granges were found to work much better where the ritual was strictly carried out; that laxity in discipline tended to weakness.

An Alabama grange has appointed a committee to visit the farm of each member of that grange, and to report in writing the state of the growing crops; condition of farm and fences; quality and condition of stock; methods of cultivation; rotation of crops; kinds of crops raised, and the varieties of each; varieties of fruit raised, and the general condition of farm buildings. These reports are not for publication, unless the owner desires, but are to form the subjects for discussion at future meetings. Such grange work cannot but be profitable to the community in which it is situated, and could be imitated by other granges with much benefit.—*Rural World.*

The officers of the Kansas State Grange have established a monthly official paper, with "Patron's Gleaner" as its title. The *Kansas Farmer* has this to say about it:—"With the State Grange warehouse of Kansas standing idle and locked up, the funds of the State Grange treasury frittered away without a business organization outside three or four counties worthy the name, the forty thousand Patrons of Kansas have a right to demand a new Executive Committee that will not resort to the flimsy pretext of an organ to sustain and cover up their inefficiency and imbecility."

Ohio now has 1,200 granges, with an average membership of about fifty each. For the past few months the trade of the Order there has amounted to about \$100,000 per month, at a saving of about 25 per cent. The Order kept free from party politics during the late heated canvass in Ohio, showing it was too pure for party strife.

Lectures in fact, and not in mere theory, will be found very beneficial to the Order. Not alone should the regularly selected brother deliver these well-digested thoughts, but at stated periods each brother and sister should confer a special favor on the grange by delivering a few well-prepared remarks on some subject of interest.

Absentees.

In many Granges there are members who seldom or never attend the meetings. It is as much the duty of a member to attend the Grange as to pay dues, for getting farmers together, where they can talk and consult, gives the Grange its main strength. Let this be looked to. If any member habitually absents himself, he will neither know of nor abide the action of his Grange on important business matters. He is pointed to by outsiders to show that the Grange has no meaning, and becomes a stumbling block over which others cannot be induced to come. Continued absence without excuse is sufficient cause for a Grange to grant a withdrawal, whether asked for or not, and it will be found best to vote it.

H. D. Ranney, Secretary of River Valley Grange, Michigan, writes, under date of 16th September: Yesterday twenty-one Grangers, with teams, turned out for a brother who could not work, and sowed ten acres of wheat, cut three acres of corn, dug a field of potatoes and put them in the cellar, and cut half an acre of buckwheat. The sisters were also there with a bountiful supply for the inner man. We think that is as it should be.

W. Pemberton Page, Esq., the Worthy Secretary Dominion Grange, kindly offers to supply us monthly with items of Grange information. Mr. Page will please accept our thanks for his kind offer; we will be pleased to give his communications space in our columns.

Good Health.

Diphtheria.

There are at present in both town and country very many cases of this contagious disease, that, very often as at present, prove fatal. As the greatest care of the patient is necessary, from the moment when the first symptoms are perceived, which is often some time before the services of a physician can be procured, we publish the following very useful authorized article on the subject. It is the Report of the Sanitary Committee of the Board of Health of the City of New York:

MODE OF ATTACK.—Diphtheria is, therefore, a contagious disease (not perhaps as marked as scarlet fever) induced by contact with persons and objects infected. It may be diffused by the exhalations of the sick, by the air surrounding them, or directly by exudation, communicated in the act of kissing, coughing, spitting, sneezing, or by the infected article used, as towels, napkins, handkerchiefs, etc. The poison clings with great tenacity to certain places, rooms and houses, where it may occasion cases after the lapse of months.

SYMPTOMS.—In ordinary attacks the poison begins to act the moment it lodges upon the tissues, but, like a vaccination, causes but slight sensible effects in from two to five days; then there is marked prostration, dryness of the throat and pricking pains in swallowing; the throat becomes red, patches of white exudation appear, and the glands of the neck swell. In mild cases these symptoms subside on the third or fourth day from their appearance; if more severe, these symptoms may be prolonged; if unfavorable, the fever increases, the local inflammation spreads and exhaustion rapidly follows.

PREDISPOSING CAUSES.—THE PERSONS.—Diphtheria attacks by preference children between the ages of one and ten years, the greatest mortality being in the second, third and fourth year; children of feeble constitution and those weakened from previous sickness, and those suffering from catarrh, croup and other forms of throat affections.

SOCIAL RELATIONS.—All classes are liable to diphtheria where it is prevailing, but suffer most who live on low wet ground; in houses with imperfect drains or surrounded by offensive matter, as privies, decaying vegetable or animal matter; in damp rooms, as cellars; in overcrowded and unventilated apartments.

SEASONS.—Diphtheria is not affected either by heat or cold, drought or rain.

PRECAUTIONS.—(a) THE DWELLING OR APARTMENT.—Cleanliness in and around the dwellings and pure air in living and sleeping rooms are of the utmost importance where any contagious disease is prevailing, as cleanliness to prevent and mitigate it. Every kind and source of filth around and in the house should be thoroughly removed, cellars and foul areas should be in perfect order, dirty

walls and ceilings lime washed and wood-work painted; the carpets, bed clothing, upholstered furniture, etc., exposed many days to fresh air and sunlight; all articles which may be boiled or subjected to high degrees of heat should be thus disinfected; such rooms should be exposed to currents of fresh air for at least one week before re-occupation.

(b) WHEN DIPHTHERIA IS PREVAILING, no child should be allowed to kiss strange children, nor those suffering from sore throat (the disgusting practice of compelling children to kiss every visitor is a well contrived method of propagating other and graver diseases than diphtheria); nor should it sleep with nor be confined to rooms occupied by or use articles, as toys, taken in the mouth, handkerchiefs, etc., belonging to children having sore throat, croup or catarrh. If the weather is cold, the child should be warmly clad with flannels.

(c) WHEN DIPHTHERIA IS IN THE HOUSE OR FAMILY, the well children should be scrupulously kept apart from the sick in dry well-aired rooms, and every possible source of infection through the air, by personal contact with the sick and by articles used about them or in their rooms should be rigidly guarded. Every attack of sore throat, cough and catarrh should be at once attended to; the feeble should have invigorating food and treatment.

(d) SICK CHILDREN.—The sick should be rigidly isolated in well aired (the air should be entirely changed at least hourly) sun-lighted rooms, the outflow of air being, as far as possible, through the external windows by depressing the upper and elevating the lower sash, or a charge from the mouth and nose should be received into vessels containing disinfectants, as solutions of carbolic acid, or sulphate of zinc, or upon cloths which are immediately burned, or, if not burned, thoroughly boiled, or placed under a disinfecting fluid.

Birds vs. Insects.

Birds should be protected and not killed. It should be an offence to kill birds, as they are the friend of the farmer, and save him an untold amount of property. Of late years it would seem that insects have multiplied a hundred fold, and now most every crop is subject to their depredations. The potato crop must be protected from the Colorado beetle; the currant from the saw fly; the plum from the curculio; the apple crop must be protected from the borer, the codling moth and the tent caterpillar; the pear from the slug; the cabbage from the cabbage worm; cucumbers and melons from the squash beetle; the corn from the cut worm, army worm, and chinch bugs; oats and wheat from the wire worm and chinch bugs; and in some of the Western States, from the Colorado locusts; the tobacco crop from the tobacco worm; the cotton from the cotton worm, and so on to the end of the list. It is a continual warfare from the time the farmer plants his crop till he harvests it. The loss to the farmer in 1874 was not less than \$300,000,000.

Now the question arises, What is the remedy for all this devastation? There are two: birds, and the united work of the farmers. Farmers should protect the birds and work to destroy these insects. It is surprising what united effort will bring forth. In Minnesota, some sections of the country have been freed from the locusts by an united onslaught of the people, whereby over twenty thousand bushels of locusts, in one county, have been killed, and the premium of \$1.50 per bushel has been paid, and the crops saved to a great extent.

Orchards can be protected from the tent caterpillar by syringing the nest with water in which a tablespoonful of Paris green to a pailful has been mixed; a pailful being sufficient for two trees. The codling moth can also be trapped by means of cloth placed in the forks of the branches, and hay bands wound around the trunks, from now till fall, and the insects collected and killed. The potato beetle may be destroyed by sprinkling the top with water in which Paris green has been mixed. It only needs an united effort on the part of the farmers to greatly diminish the insects that destroy so much every year. But the greatest agent is the birds. They will catch the white butterfly, the parents of the cabbage worms, the saw fly, which produces the currant worm. The birds eat the eggs of the insects which are so destructive. Millions of eggs are eaten by the birds. To place the estimate at \$600,000,000 which was saved to the farmers last year by the birds is a low estimate. Save the birds and our insect pests will be greatly diminished.

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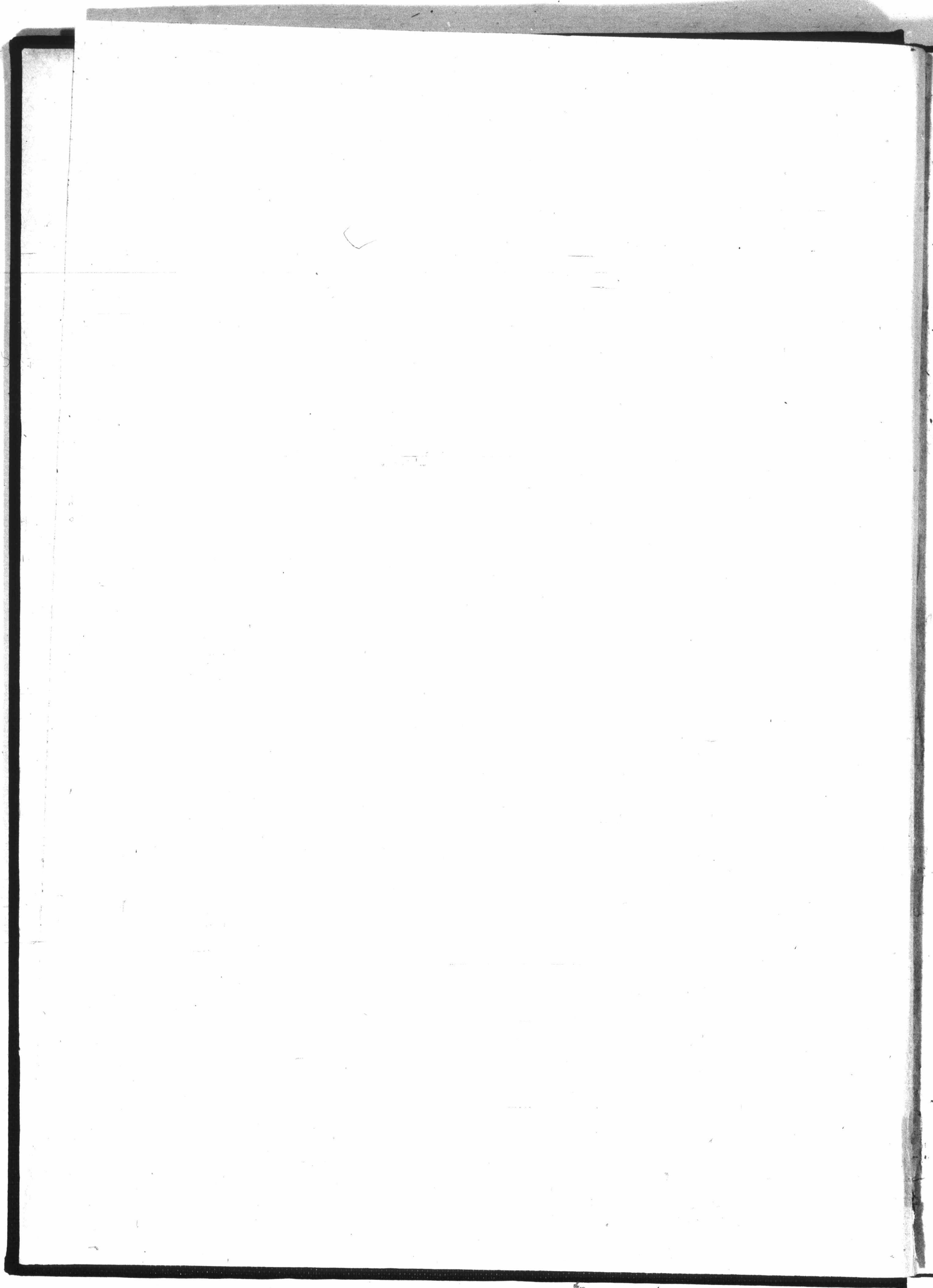
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