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THE
Canadian Agriculturist,
AND
JOURNAL OF THE BOARD OF AGRICULTURE
OF UPPER CANADA.

VOL. IX.

TORONTO, APRIL, 1858.

No. 4.

THE AGRICULTURIST.

This periodical, like its predecessor, the *Cultivator*, has now been before the Canadian public several years, and cannot, we think, have failed in effecting no inconsiderable amount of benefit to the staple interest of the country. The great improvements that have been made of late in our agriculture and its cognate arts, so patriotically encouraged by legislative aid and enactments, and ably seconded by the energetic efforts of enterprising individuals and societies, must have been materially expedited by a monthly journal expressly devoted to the recording of whatever is of importance to the agricultural interest, and to the diffusing of information relative to this indispensable pursuit throughout the Province. These efforts, we believe, have hitherto been far more beneficial to the public than remunerative to the proprietors of these journals. The amount of time and expense required in preparing and publishing a good monthly agricultural paper is much greater than people in general are aware.

Arrangements have recently been completed between the proprietor of the *Agriculturist* and the Board of Agriculture, by which that work will for the future be prepared and published by the latter body. It is to be regretted that owing to causes which could not well be obviated, a temporary suspension of the paper has taken place. The completion of the last sheets of the Transactions of the Board for 1857, for the press, has, among other things, been the cause of delaying for a short time the continuation of the *Agriculturist* in connection with the first sheets of Transactions for the present year. Subscribers, however, may rest assured that every effort will now be made to bring up arrears, and that after a short interval, the work will appear punctually on the first of each month.

As three numbers of the present volume had been issued before the arrangements for transferring the work to the Board of Agriculture were completed, it has been deemed most advisable to finish the volume in the same order of numbering and paging, and of a size to correspond with the Transactions of the Board.

Every endeavour will be used to fill the present number of pages with interesting and useful matter, and it is in contemplation to enlarge and otherwise improve the volume for 1859, by the regular introduction of illustrations, including portraits of some of the more prominent of the prize animals, and cuts of the newest and most important implements and machines, exhibited at the Provincial Shows. It is most desirable that this publication should be so enlarged as to form a complete repertory of agriculture, and the arts relating thereto, for at least this section of the Province. The managers of Agricultural Societies, Mechanics' Institutes, and enterprising individuals, are therefore earnestly requested to furnish the Board with condensed statements of whatever may transpire relative to those pursuits, within their respective localities, that would be interesting and useful for publication. A principal feature of the work will consist of a monthly digest, for the use of the Canadian farmer and agricultural machinist, of what is doing in Europe and America, in relation to all matters in which they possess a common interest. To persons whose time and means are necessarily restricted, we hope our publication will keep them pretty well posted up in these subjects; but to such as possess ampler means and leisure we would strongly recommend other papers than our own; among which may be mentioned, *The Country Gentleman* and *The Rural New Yorker*, excellent weeklies adapted to rural wants and homes; and among the many monthlies, the *Genesee Farmer* and *American Agriculturist*, would amply repay the cost and perusal. We want our farmers—especially our *young farmers*—to observe and experiment, to read and think, and to communicate through the press, the opinions they may form and the results at which they may arrive. In this way we shall gradually accumulate materials for a Canadian Agricultural literature, worthy of this rising Province, and the independent cultivators of our free and fertile soil.

A sheet, separately paged, will accompany the Journal, consisting of the *Transactions of the Board of Agriculture*, comprising Prize Essays, original papers addressed officially to the Board, abstracts of the annual Reports of all the Agricultural Societies in connection with it, together with the official Report and Premium List of the Provincial Exhibition.

Thus, in addition to the value that may attach to its official character, THE JOURNAL AND TRANSACTIONS OF THE BOARD OF AGRICULTURE OF UPPER CANADA, will unquestionably be, at half a dollar a copy, per annum, the cheapest periodical of its kind every offered to the Canadian public.

NEW YORK STATE FAIR.—The Executive Committee of the State Agricultural Society visited Syracuse a few days since, to select grounds and make other preliminary arrangements for the State Fair. They selected the County Fair Grounds and the farm of Mr. Furman adjoining, as the location of the exhibition. The Fair is to be held October 5th to 8th, inclusive. Pamphlets containing Premium List, General Regulations, &c., may be obtained on application to the Secretary, (B. P. Johnson, Albany,) or at the Agricultural Warehouses in Rochester, Buffalo, Syracuse, Utica, Albany and New York.—*Rural New Yorker*.

THE WHEAT FLY.

THE CAUSE OF ITS INCREASE AND THE CURE FOR IT.—ADAPTED SPECIALLY FOR THE PRACTICAL WORKING FARMERS OF CANADA.

By Edward Lefroy Cull, of the Canada Company's Office, Toronto.

It is now known to all practical farmers, (and the fact has been forced on the attention of many by the entire or partial destruction of their crops) that the Wheat Crop of the Province is every year greatly injured, and its total destruction threatened, by the ravages of the Wheat Fly.

Lower Canada from being a Wheat exporting country, cannot now raise the bread required for her population.

The northern part of the state of New York, has been greatly injured, and the far famed valley of the Genesee has been completely destroyed as wheat producing territories, by the ravages of these insects.

The Midland Districts of Canada for several years ceased to produce Fall Wheat except partially, and now the Niagara District is also desolated by the fly.

It behooves every farmer in Canada, let him be high or low, rich or poor, to examine into the matter, and if a remedy can be found, to assist in applying that remedy, and thus attempt to abate the mischief.

The late extremely valuable prize essay of Professor Hind gives extensive information on the subject, but it is not such as to be within the reach of all, and is too learned and abstruse to be easily understood by many.

There are several kinds of wheat fly; but for the practical farmer they may be reduced into two classes, viz: those which destroy the berry or grain of the wheat, and those which attack the stem.

All the kinds are of the most tender description of fly; they are very small, and do not live through the winter in their winged state.

All wheat flies pass through four states of existence and transformations:

First. The fly, whose existence extends only over a few weeks,

Then the egg, which is laid by the fly, and after depositing which the fly dies.

Then the worm, which is the destroyer of the grain.

And lastly, the Chrysalis in which shape the insect passes the winter months, and from which shape it emerges into the fly the following season.

The researches of those who have studied the natural history of these insects have indicated the time and season of its taking its respective forms, and it is owing to the information thus obtained, that we are enabled to point out (what is believed will be) a cure for the evil.

We shall commence with those insects which destroy the wheat in the ear:—

These are the Midge, the Weevil, and the Caterpillar; there may be others, or these names may by different persons be applied to the same kind, but as they all necessarily come at the same time, and undergo the same transformations, the remedy for all is the same, and the practical farmer need not care, whether it is one or a dozen kinds, that is destroying his grain, so that one method of cure will answer for all.

This kind of insect whilst in its fly shape, deposits its eggs in the new and tender ear of the wheat. The eggs hatch and become worms, which eat the grain or wither and shrink it up.

The worm after having existed a few weeks and fed its fill, becomes a chrysalis. Those which are ready for the change before the grain is harvested, fall to the earth, and bury themselves just below the surface; there they turn into chrysalis form and so remain during the winter.

Those worms which have not come to maturity before the grain is harvested,

go into the barn or stack, with the wheat, and there assume the chrysalis form. Thus we have our enemy in two places; part (and the greatest number of them), in the field, and the rest in barn or stack. Those in the barn or stack are separated during the thrashing and cleaning of the grain, and if we burn all the chaff, siftings, and seeds, and the worst part of the tailings, we destroy the insect.

If however, we neglect to burn them, and let them go out in the manure, they come forth as flies in due season, and attack the nearest wheat.

By far the greatest number of insects however, remain on the surface of the field on which the wheat was grown, and if they are allowed to remain there undisturbed, until the succeeding spring and summer, they come forth from the chrysalis into the fly shape, and then have the power of removing themselves to the nearest wheat field.

If we would rid ourselves of them, we must destroy them on the ground, before the time comes for them to change into a winged shape.

This can only be done by burying them, none of this kind of worm has legs, they have the power of just burying themselves in the soil; but if they are buried in the soil by the plough six inches deep, and they are allowed to remain so buried until after the time arrives for them to become flies, they are destroyed, for they cannot exist under ground after the time comes for them to assume the fly shape.

The ordinary system of ploughing, if done as soon as possible after harvest, would no doubt do a great deal of good, but owing to its laying the slices moved by the plough one against another, with one edge of the old surface exposed to the air, all those insects which are within reach of the air will still come forth as flies in due season. If ordinary ploughing is attempted as a method of destruction, the ground should immediately afterwards be well harrowed, so as to complete the burying of the insect as deep as possible. Ordinary ploughing cannot be depended on as a cure, it may act as an abatement of the evil.

Double ploughing, or ploughing twice in a place, would bury the insects so deeply, as to keep them safely from again coming forth.

This must be done either with a plough made on purpose, (and there are plenty of such to be purchased,) or with two teams and ploughs, one following the other; both ploughs being set to take the same width of furrow, but the first to take the shallowest cut possible, and the second to take one far deeper. You would thus bury thoroughly the surface on which the insects lie.

Another, and indeed the most important point is, that clover or timothy should never be sown among the wheat, to follow that crop for hay, or pasture. When this is done every worm that falls from the wheat at harvest time comes out next year as a fly, and (as has before been said) goes off to the nearest field of wheat.

All these kinds of fly come to the wheat. All those which injure the wheat in the ear come forth in the fly shape in the spring in the field where they were deposited at harvest time, or from the farm or stack yards, and manure heaps. When this fact is once understood, common sense will teach every one the necessity of destroying the insect while it is in the worm or chrysalis state, and thus incapable of locomotion.

It will naturally however, be said by those who read this, and who come to the same conclusions as the writer: what is the use of my taking these precautions, when the chance is that I do not produce the flies from which I suffer? I may farm well, and produce no fly, and my neighbour may produce flies enough to ruin the crop on both sides of him.

The only way to prevent the evil is to make municipal laws to meet it. In places where noxious weeds, such as the thistle, abound, there are township

laws obliging the owners of land on which those weeds grow, to cut them before the seed appears.

A man has no more right to produce wheat flies to destroy his neighbour's crops, than he has to raise wolves to destroy his cattle, or allow mad or mischievous dogs to be at large. Legislation is as necessary in one case as in the other, and the only course to take is to enact by the laws of the municipality.

First—That no clover or grass seed shall be sown amongst wheat.

Secondly—That all wheat stubbles shall be ploughed with the double plough, before the coming of the frost, and that fields so ploughed shall not, during the following spring and summer, be again ploughed, but only cultivated on the surface.

No reasonable person who has at all studied the subject, will doubt that with these precautions the existence and increase of the first class of fly mentioned (*viz.* those which destroy the wheat in the ear) may be very considerably checked, if not entirely destroyed.

Of the second class of these insects, namely, those which attack the stem of the wheat, there is only one at present known in Canada, this is called the Hessian Fly, but is often known to farmers as the flax-seed worm or grub.

There are two crops of this insect in the year; the first crop attacks the wheat in the fall, the second crop attacks the wheat in the spring.

They come from a fly not larger than the midge, which fly lays its eggs on the blade of the young wheat during September, (and most likely part of October). The eggs hatch into small worms, which make their way down to the stem end of the blade, and between it and the future stem of the wheat, and there fix themselves, and suck the juices of the plant and thus destroy or greatly injure the stems affected.

As, however, the mischief happens during the time the wheat plant is tillering out, the whole of the stems are seldom affected at once, and no doubt the plant, from having some stems destroyed, naturally throws out others, so that the plant is not often absolutely destroyed; but where attacked at all, it is always greatly injured. As winter approaches these maggots or worms change their colour, and become darker and just like a flax seed, and thus take that name. The chrysalis of this worm is formed within the skin of the worm, and this skin forms its winter protection.

It remains in this flax-seed shape until spring is well advanced, when it comes out as a fly and lays its eggs on the leaves and stem of the wheat, only this time it attacks the plant at the second, and even the third joint.

The effect of their constant suction is to weaken the stem of the wheat by preventing the flinty coat forming on the straw, and it then will not bear its own weight but falls down and is destroyed.

This second crop of insects undergo the same changes as the first crop, and again emerge from the straw as flies, and in that shape come to perfection just in time to attack the newly sown fall wheat, and deposit their eggs on the young blade.

This class of insects is much more difficult to deal with and destroy, than those which feed on the ear of the wheat, because you cannot destroy the insect without also destroying the plant of the wheat.

The fall and winter abode of the insect is down in the crown of the plant, often below the surface of the earth, and consequently out of the reach of harm by all means less than the absolute destruction of the plant. You cannot destroy it without also destroying the plant in which it lives, and it is a very hard thing for a man to be called on to destroy the wheat which is to produce his future crop.

Nevertheless the double plough in this case, as in the case of the midge, or

weevil, is the only cure; and where a field is badly affected in the fall, it ought always to be ploughed up, and the insects carefully buried, and the fall wheat replaced with spring wheat.

Where this is found necessary, the spring wheat must be sown on the ground without a second or spring ploughing, for if you plough again in the spring you turn the insect once more to the surface of the ground, and they come forth as flies just in time to attack the newly sown spring wheat.

Fortunately for the human race, by the wise and unerring laws of nature, all insects which feed on vegetables, and amongst them the Hessian Fly, bring with them in a measure their own cure; did they not do so they would so increase as to destroy all crops. The cure (or rather the abatement of the evil) is effected in the following manner:

About the same time that the Hessian Fly appears, there also appears another and much smaller fly. The latter are called Parasites. They search for the eggs of the Hessian Fly, and deposit one of their own eggs either in, or on, the egg of the Hessian Fly; the egg of the parasite hatches in the body of the worm of the Hessian Fly, and continues with it, and feeding on it, until the worm of the Hessian Fly is destroyed.

There are four kinds of these parasites well known, and they attack the hessian fly in all stages of its growth, and it is believed by those who have made the history of these insects their study, that nine out of ten of all the hessian flies which are produced, are thus destroyed. It is in this manner that the numbers of the hessian fly are kept down from destroying the entire crop of wheat.

Sometimes however, the season for the parasites is unfavorable, and they are destroyed by the weather, or some unknown cause, instead of their destroying the hessian fly, and when this is the case the mischief done by the hessian fly is intolerable, and ruinous, and then the farmer is brought to bestir himself, and look out for a cure.

The cures generally sought have been, sowing kinds of wheat which are of so tough and strong a nature as to resist injury, and there are several such, but unfortunately those kinds of wheat are not so profitable to grow, and do not make such good flour, and they are gradually abandoned, and the better sorts again planted, to be in time again swept off by the attacks of the hessian fly; besides which these fly-proof kinds of wheat when often sown in the same locality, after a time lose the power of resisting the attacks of the insects and thus become unavailable.

The double plough therefore is the only certain method of destruction of both classes of insects.

When the evil arises from the midge, weevil, and insects of that class, the insects, in their worm or in their chrysalis shape, must be buried with the stubble in the field in which they were produced, and must remain so buried, beyond the time when in the course of nature they would emerge in their winged shape.

The second class of insects, and the hessian fly, must be destroyed in the wheat plant in which it is formed, by ploughing that plant under, with the double plough, before the coming of the winter, or so early in the spring that the flies have not come forth from their chrysalis form.

All farmers must bear in mind that by raising wheat flies, whether of the one sort or of the other, they do not alone injure themselves and their own crop. If they did injure themselves alone, no one would have a right to say a word on the subject, their fault would bring its own punishment, and would thus cure itself; but this is not the case.

It is useless for farmer Jones to farm well, and destroy all the enemies

which attack his grain, if farmer Smith, whose farm adjoins his, is to be allowed to raise countless hosts of insects, to devastate farmer Jones' crops, as well as those of all his other neighbours.

It is certain that a mischief so general cannot be abated by anything but combined action. If a farm is so isolated that it is beyond the reach of the fly, from its nearest nursery, good farming, ploughing the wheat stubbles in due time and in a proper manner, and burning the chaff, seeds, and wheat offals, after thrashing, will destroy the midge, and all that class of insects, which attack the wheat in the ear, and leave the farmer whose farm is so distant from others as not to be infected, free from the pest, though other parts of the country should be suffering from it. The hessian fly would require a different mode of treatment on such an isolated farm.

The young wheat should be closely examined at intervals during the fall, and as soon as the plant is found to be troubled with the insect, the wheat so affected should be ploughed under in the best possible manner, to be replaced with spring wheat, (which must be sown on the stale furrow) next spring. These precautions (except to a limited extent) could not be adopted in a populous neighbourhood without calling in the assistance of municipal or legislative enactment.

Could we legislate so as to cultivate the Province in counties, or districts, the cure for the wheat fly of both classes could be effected by ordinary cultivation alone. Suppose for instance that County Councils were to give notice, that after a certain period, say one or two years in advance of a specified time, the land in each county should be so cultivated that during one year to be appointed, all the farmers of the county should cease to sow wheat either spring or fall. This need not be applied to the whole Province at once, but to Counties or even Townships. The consequence would be, that the entire crop of the wheat fly (whether of the one class or the other) in the district so cultivated, would come forth in their winged shape in due season, but having no wheat in which to deposit their eggs, would perish, and the district so treated would not again be troubled with the insect, until by imperfect or bad cultivation they were again produced. Such municipal laws as here proposed might be put in force at certain specified times with doubtless excellent effect. It does not appear that there has ever been any special legislation on this subject either in England or America. Some years since Holland was devastated by the wheat midge, and there the legislature ordained, that for either two or three years, wheat culture in the infected districts should be discontinued, and thus a cure was effected.

The sabbath of the land, under the Mosaic Law, (see Leviticus 25th chap. and third and following verses) would have the same effect, and be an absolute cure for all kinds of wheat fly. No doubt Canaan, as well as every other wheat-growing country, was subject to the wheat fly. We know that the Mosaic code of laws was the wisest ever made; but only the law itself, and not the immediate reason of its being ordained, has descended to us.

Why should not the community in Canada legislate, either in their Municipal Councils or in Parliament, for the destruction of the various kinds of wheat fly. The question is, shall we grow wheat and continue to be a wheat exporting country, or shall we allow an internal pest to devastate our fields and oblige us to raise only the rough and unmerchantable grains? If the matter is not looked to at once, the fly will take it into its own hand, and the whole Province, like those parts now seriously affected, must cease to sow wheat.

The ceasing to sow wheat cures the evil, because it removes the food of the insect, but in a few years after the resumption of wheat growing it will again appear, unless the subject in the meantime becomes properly understood, and

the necessary means for the prevention and destruction of the insect are adopted.

The thing we have most to fear is, that the insect of either, or both classes, may obtain possession of our newly cleared lands. There the proposed cure cannot be adopted, and the ceasing to grow wheat will be the only remedy.

In the old cultivated districts where the plough meets with no impediment, the proposed remedies can be adopted, and must be adopted, in the course of the next two or three seasons, or farewell to the boast of Canada our wheat crop.

ORNAMENTAL PLANTING.

[Read before the Central Agricultural and Horticultural Club, in the Room of the Board of Agriculture, Toronto, March 27, 1858, by Professor Buckland, and published in accordance with a resolution of the Meeting.]

To a person of a cultivated taste, accustomed to the artistic productions and improvements of the old countries of civilized Europe, nothing, perhaps, is felt to be a greater draw-back in this "New World" of ours, than the general absence of those sources of higher enjoyment and pleasing associations, which more or less distinguish refined and old communities. Even in our principal towns and cities, notwithstanding the progress which an improved architectural taste is now happily making, several of the finest houses, and even public buildings, are sadly disfigured, and their expression impaired, and sometimes altogether destroyed, by the most extravagant signs and daubs, indicating the vocations carried on within. In the country the roads and fields are almost invariably laid out in perfectly straight lines, with corresponding rail fences of a zig-zag form, scarcely a solitary tree or bush being left to relieve the deadening monotony, and any effort of art is seldom thought subsequently necessary to hide the repulsive nakedness and deformity of the landscape, that have inevitably resulted from the ruthless and wholesale destruction of the numerous and oftentimes beautiful denizens of the forest, in the usual processes of clearing.

Now, I am far from condemning indiscriminately the whole of what may be conceived or felt as draw-backs and imperfections; several of them being more or less incidental to a new country, only just emerging from the pristine forest. Considered in a mere economical point of view, as adapted to the commencement of settlement in a new country, the laying out of roads and farm boundaries in straight lines, has, without question, several important advantages; while the log hut and zig-zag rail fence, are those which convenience or necessity naturally point out in making the first subdual of wild nature. In the progress of settlement a sort of natural order may be generally traced; the original log hut is in the progress of improvement replaced by a stater and more comfortable dwelling, erected, perhaps, on a more convenient and picturesque site, the result of knowledge which can seldom be acquired in such situations, but from experience. A garden is laid out, some fruit and shade trees are planted, and the homestead will soon wear an air of comfort and cleanliness, contrasting most favorably with an earlier state of things. Indeed, when the great and numerous difficulties necessarily attendant on the commencement of a settlement in the primitive forest are duly considered, and the generally imperfect knowledge and scanty means of the first settlers, the state of progress that has already been reached in many portions of Canada, cannot be otherwise regarded by such as are capable of forming a sound opinion on the subject, than as highly satisfactory and en-

couraging. The advance that has been made in most of the essential elements of a higher and enduring civilization, both in this Province and many parts of the United States, during the last quarter of a century, can find, I believe, no parallel either in ancient or modern times. I make this remark in no boastful spirit, or with any desire whatever to depreciate the past. With gratitude should the services of our predecessors, living in the earlier periods of the world's history, be remembered and cherished. By pursuing in a truthful and enquiring spirit the same continuous track which they marked out by persevering study and exertion, we shall best fulfil the great purposes of existence, and gradually enlarge the sphere of human knowledge and happiness. The great law of progress is all embracing, traced alike in the physical history of our planet and its living organisms, and in the intellectual and moral constitution of man. The experimental sciences and industrial arts have received during the last few years an astonishing impetus and development, thereby increasing our material wealth far beyond any thing previously known in the history of the race, and what we now peculiarly and most urgently need is a similar progress in the various elevating and humanizing arts, which appeal mainly to taste, imagination, and the continually enlarging circle of human aspirations and sympathies, directly emanating from the moral and social affinities, and spiritual nature of man.

Believing as I do, that there is a voice in nature every where speaking to the ear of enlightened reason, to every earnest minded seeker after what is true and beautiful, in mildest accents of instruction and encouragement, that natural objects, particularly trees and flowers, when tastefully arranged, are admirably adapted to impress and cheer man's spirit, to inspire him with higher purposes and holier aspirations, and render his home more attractive and happy, I have not thought it irrelevant to the general purpose for which we are here accustomed to meet, to request the attention of members of the Club to the subject of ornamental planting.

It is scarcely possible to imagine any spot of earth which does not admit of the ameliorating influences of art. The great object of the landscape gardener, is so to bring out and harmonize the natural features of a place, so as to render their contemplation a source of agreeable sensation and elevating refinement to the observer. It is true that the gratification of a high degree of taste in these matters, will sometimes involve a pecuniary outlay which few settlers in a young country can be expected to bear. But in many situations small means, when directed by sound judgment and correct taste, will accomplish far more in beautifying a place or neighborhood than is commonly imagined.

With comparatively little labor and expense, for example, could the roads of the country, public or private, be rendered far more agreeable to the mind of the traveller by planting on either side, at frequent intervals, the ordinary forest trees of the country. Not only would their shade be grateful during the heats of summer to the traveller, but while beautifying and enriching the landscape, the trees themselves might be made to minister to the physical wants and domestic comforts of their proprietor. Trees, either singly or in clumps, planted around a dwelling house and out buildings, and in the corners of fields, while they extend both to man and beast protection from the parching rays of a summer's sun, and the chilling blasts of winter, are also valuable as timber; an article that is already getting scarce in some of the older settled sections of the country, and its price consequently advancing. On farms having but few specimens of the sugar maple in the forest attached to them, how easy and natural would it be to plant a number of that beautiful and most useful tree by the way side and in the corners of fields. Thus standing singly and exposed, the maple would, like most other trees, fully develop its natural form and character, and yield a larger supply of sugar. Notwithstanding the sugar maple is

somewhat of a slow grower, and parts with the beautiful verdure of its foliage rather early in the season, yet when standing alone, it sends up a tall, stout, clear trunk, with numerous boughs spreading out into a uniform picturesque head, so that I should be disposed to plant it pretty liberally, both in rows and singly, in the park or lawn. The red and white maple are much faster growers, and deserve attention in forming a variety, but their foliage is thin and poor compared with that of the sugar maple. The white or weeping elm, indigenous to our forests, is perhaps the most graceful tree of large dimensions for street planting; but that it may fully develop its lovely pendant branches, it must have plenty of room, and is therefore not well adapted to narrow streets or confined situations. This beautiful tree richly deserves cultivation wherever it will flourish. No plantation or landscape in these latitudes can be considered complete without it. The weeping elm is a tree that cannot fail to gratify the most fastidious taste, and satisfy the highest expectations.

Basswood, or the American linden, is also a highly ornamental tree, possessing an exceedingly rich foliage, and a cleanly appearance. It is easily propagated, grows quickly and bears transplanting well.

The Horse-Chestnut is unquestionably entitled to a first rank among foreign ornamental trees, susceptible of cultivation in this climate; although our late spring and early autumn frosts are sometimes injurious to its growth, and the maturing of its wood. The foliage of the horse-chestnut is peculiarly rich, thick and large, and its flowers—unhappily of very short duration—are really magnificent. A sight more truly gorgeous in the vegetable kingdom of northern latitudes can scarcely be imagined than a long avenue of majestic horse-chestnuts in full foliage, at the time of blossoming. Those who have seen Bushy Park, in the vicinity of London, will need no further illustration of the truth of this remark. Our own College Avenue already attests it each returning spring, notwithstanding the injury which the trees sustained by the breaking of young shoots and branches for the most unwarrantable purpose of getting the flowers and nuts; a practice which, unfortunately, public taste is not yet sufficiently advanced to suppress. And I may here take the opportunity of remarking, that the wilful mutilation of shade and ornamental trees so frequent among us is a perfect disgrace to a civilized, christian people; an outrage alike on the rights of property—public as well as private—and the truth and moral feeling of the community. One of the first lessons acquired by an educated and truly civilized people, possessing the light and experiencing the humanising influence of christianity, is to cherish and admire the grand and beautiful in nature, and the true and lovely in art. I will observe further in this connection, that the practice of allowing swine and cattle to roam at large, unfortunately so common on this continent, is certain to frustrate the planter's object, as far at least as the ornamenting of our highways is concerned, and it is a fruitful source of bad feeling among neighbours, and altogether inimical to the progress of rural taste and beauty. In a word, the practice has grown into an intolerable nuisance and calls loudly for some effectual remedy. But to return from this digression:

The White Ash may be sparingly introduced for street and avenue planting. Its foliage is light and graceful, the tree grows to a large size when it has sufficient room, and is not slow in reaching maturity.

The Beech and Oak—trees which for use, beauty and majesty of expression, have commanded the veneration of ages—are not so well adapted to street planting as those before mentioned; they are slow of growth, and do not bear transplanting so well; yet I should much regret to see either of them wholly rejected from our streets and highways. They ought certainly to occupy a prominent place in parks and lawns of any considerable extent, and should be found wherever a mixture or variety is desired.

Nor ought the American Chestnut to be omitted: besides being a tree of rapid growth when planted in a congenial soil, and of no mean or restricted economic value and application, it possesses, likewise, much grace, dignity and beauty, whether in regard to its stately form, rich and exuberant foliage, or beautiful white flowers. It aids materially in giving variety and expression to the landscape.

The Hickory, though of slow growth, is a tree of luxuriant verdure and pleasing form, justly claims a place among park and roads trees, wherever the soil is suited to its growth. Apart from the richness of its foliage and the beauty of its form, the hickory has strong claims upon our attention for its economic importance in the mechanical arts.

The Acacia, or, as it is now commonly called, the Locust-Tree, being a native of this continent, and so ornamental that no shrubbery or plantation can be considered as complete without it, must claim some attention at our hands. It has been for many year widely diffused in Britain as an ornamental tree, having been early introduced among the first trees from this continent, while what are now the United States were British Colonies. It was formerly supposed to be identical with the Acacia of Egypt, a tree which was imagined by the early missionaries to have supplied John the Baptist with food in the wilderness; and it was from this circumstance it acquired the name of locust-tree. It grows fast while young and will soon ornament a place. The principal objection that can be urged against it is, that it is late in coming into leaf, and parts with its foliage—which, with its blossoms, all must admit to be very graceful—very early. Evelyn recommends it as “deserving a place among our avenue trees, adorning our walks with its exotic leaves, and sweet flowers; very hardy against the pinching winter; but not so proof against its blustering winds.” Even in this climate the live wood of the Acacia is in general sufficiently hardy to withstand our our greatest cold, but the earliest frosts of autumn are sufficient to denude it at once of its graceful foliage. The first Acacia introduced into Europe in 1635, was planted in the *Jardin des Plantes*, at Paris, attained the height of seventy-five feet, and is still I believe, alive. About the year of 1815, it showed symptoms of decay, but the branches being lopped, the trunk afterwards shot out with renewed vigor. This is, in all probability, the oldest American tree in the eastern hemisphere.

The wood of the Acacia is said to unite in a very high degree the qualities of strength and durability, and has for many years been used with much satisfaction in some departments of ship building, both in England and America; as was the case in Virginia as far back as 1733. In the year 1823 the celebrated political writer, Mr. Cobbett, undertook what he designated “Rural Rides,” in various parts of England, and which he described so graphically in his register. The County of Kent, in which I then resided, was, among other places, honored with his visits. Observing that farmers went to great expense in raising plantations, consisting of different kinds of wood for hop-poles, Cobbett, who had been driven to America some years before on account of the virulence of his political writings, immediately thought of the locust, as being admirably suited to the wants of the hop-farmer, and in all the warmth of an honest enthusiasm, boldly promised the farmers “an everlasting hop-pole.” To supply the demand which he had himself created, Cobbett imported enormous quantities of seeds from this continent, turned his garden into a nursery, and “sold altogether more than a million of plants!” Not being able to raise enough to supply all his customers, he purchased large numbers from the London nursery-men, and fortunate did the applicant consider himself, who could purchase at a high price from Mr. Cobbett, the very same locust-trees that, under the botanical name of *Robinia Pseud-Acacia*, were standing unasked for in the nurseries. The hop-planters, however,

were doomed to disappointment, and Cobbett's sylvan prelections turned out to be mere flowers of Rhetoric. The locust is a slow grower in England, except in rich soils and sheltered situations. Besides, its usual form of growth is anything but suitable to the straightness required as an essential quality of a good hop pole.

The Birch is a tree deservedly admired for its own intrinsic beauty. It has well been observed by a modern writer, "as the oak has no tree to vie with itself in the sterner attributes of majesty, dignity and strength, so the

"most beautiful
Of forest trees, the Lady of the Woods,"

stands unrivalled in lightness, grace and elegance. In one respect the Birch even claims precedence over the monarch of the forest, and that one which its slender and delicate form would least lead us to expect: it stands in need of no protection from other trees in any stage of its growth, and loves the bleak mountain side and other exposed situations, from which the sturdy oak shrinks with dismay. But the style of beauty in which each of these trees excels is so different in kind, that neither of them can properly interfere with the other."

The birch naturally belongs to the colder regions of the three northern continents. In the most elevated districts of the Highlands of Scotland it is found to flourish, and in parts of Greenland it is said to be the only tree; but wherever it grows it diminishes in size according to the decreased temperature to which it is exposed, so that in the more northern portions of British America it assumes the appearance of a mere dwarfish shrub. Its peculiar lightness and elegance arising from the slenderness of the main stem in proportion to its height, the wiriness of its branches, the thinness and small size of its foliage, together with the varied colouring of its bark, contrasting well with the dark green hue of its leaves, all combine in rendering the birch essential to the completion of the picturesque in ornamental planting. A weeping variety of this tree is often met with in the mountainous parts of Scotland, Northern Europe and Asia, which is peculiarly beautiful; it is of quicker growth and attains a larger size than the ordinary kinds, and is admirably adapted as a striking ornament to parks and lawns. In the yet more exposed elevations of these northern countries, a distinct species of birch is frequently found, *betula nana*, or dwarf birch, which, as its name denotes, is a low wiry shrub, rarely exceeding three feet in height; with numerous round, notched leaves, which are beautifully veined. Besides the importance of the birch in all descriptions of ornamental plantations, several of its varieties possess no inconsiderable economic value;—the bark being used in the arts for colouring and tanning, and forms an excellent material with which the Indian constructs his light and elegant canoe.

The Mountain Ash is universally admired as an ornamental tree and, as its name implies, is naturally adapted to wild and exposed situations, where having plenty of room it often attains to a considerable size. It equally adapts itself to lower levels and richer soils, but dwindles if planted too thickly, and not allowed plenty of light and air. It deserves a place in every border or garden large enough to raise an ordinary shrub. Woodsworth, the true poet of nature, thus sings:—

"The Mountain Ash
No eye can overlook, when 'mid a grove
Of yet unfaded trees she lifts her head,
Deck'd with autumnal berries, that outshine
Spring's richest blossoms; and ye may have marked
By a brook-side or solitary tarn,
How she her station doth adorn: the pool
Glow's at her feet, and all the gloomy rocks
Are brighten'd round her."

(Concluded in next number.)

TRANSFUSION OF BLOOD IN THE HORSE.

In a recent number of the *Dublin Quarterly Journal of Medical Science*, some very interesting experiments are recorded by Mr. Jas. Farrell, V. S., on the success which had attended the transfusion of blood from healthy animals into the system of such as were in an advanced stage of disease. In the spring of last year a dangerous epidemic prevailed extensively among horses in Ireland, and, we believe, in several other parts of the United Kingdom. It assumed the leading features of influenza, of a low typhoid character, and was particularly prevalent and fatal in the vicinity of Dublin, and the eastern coast of Ireland. In some instances the disease developed itself with astonishing rapidity. Horses eating their morning food with their usual avidity, and appearing perfectly healthy, would suddenly sicken, and by the evening would evince so much debility as scarcely to be able to stand. The bowels and urinary organs were often violently acted upon, so as to induce symptoms more or less characteristic of bad cases of cholera. In cases where bleeding and drastic purgation had been administered the treatment became much more difficult, and in the generality of instances terminated fatally.

Mr. Farrell opened the jugular veins of a healthy and diseased horse, and by means of an apparatus, mainly contrived by himself, caused the blood to flow freely from the veins of the former into those of the latter, in quantity about three quarts. No particular symptoms were induced until about two quarts had passed, when there appeared to be produced an amount of stimulation indicated by an increased action of the heart, and a dilating of the pupil of the eye. In cases in which more than three quarts had been transfused, unfavorable symptoms followed, indicating the propriety of stopping the operation. On removing the tube, and closing the vein, all symptoms of irritation gradually subsided, and the pulse from being rapid and irritable, became slower and stronger, approaching the natural condition.

In several instances Mr. Farrell's treatment was perfectly successful; the patients beginning to amend in a few hours, and speedily became restored to their usual state of health. "Whatever obstacles and objections there may be to its performance in the human subject, there are none to prevent its becoming a most valuable agent in veterinary science."

GOOD AND BAD FARMING.

It appears that much additional interest has of late been imparted to the great cause of Agricultural improvement in several of the departments of France. The Emperor has offered medals to be awarded to the owners of the best cultivated farms; and, in the distribution of these honors, the opportunity has been embraced by several distinguished men of publicly declaring, what they conceive

to be the cheapest and most efficient methods of advancing the Agricultural interests of the country. In this way, there can be no doubt, a most needful impetus is being given to French husbandry. M. Paul Thenard, a gentleman of wealth, possessing great scientific attainments, combined with an enthusiastic fondness for rural pursuits, has of late distinguished himself in this good work. A few extracts from his last address, as they appear translated in the *Scottish Journal of Agriculture*, will be perused with interest by many of our readers. The Canadian, like the French farmer, has been in the habit of depending too much upon grain, to the comparative neglect of live stock, apparently unmindful that in these climates the mixed system of husbandry is upon the whole the safest and most profitable. The exertions which the Emperor of the French is now making to introduce some of the choicest animals of the best breeds of Britain, cannot fail to prove highly advantageous. In Canada a similar course has of late years been attended by the most encouraging success. Enterprising importers and breeders may not in all cases have met with the encouragement they deserved; in some instances, it is to be feared, an actual loss has been sustained; but the Province has been greatly enriched and improved thereby. M. Thenard, as reported in the *Journal d'Agriculture Pratique*, observes:—

“All good cultivators will bear me out in what I say, that we must have plenty of forage, and plenty of good forage, for many animals, and for many good animals. Without this there can be no good agriculture. It is, then, for the production of forage, whether natural or artificial, or good roots, that they apply themselves before everything else. For that, besides meadows, they sacrifice the half, and even three-fifths of their arable land; wheat, rape, and the other exportable products of the farmer occupy the least half. But what wheat! what rape! what crops! They are worth twice, and often three times as much as ours. Here, then, the soil is well employed with less manual labor.

“Wheat and oats are of the first importance with us. We devote two-thirds of our land to them; one-sixth to fallow and legumes for consumption at the steading, and the forage plants scarcely occupy the remainder. You see the consequence of such a practice—less manure and more surface, more labor and less return. Further, with us the live stock is a heavy charge; with them it is a great source of profit. Here, then, is a great difference.

“There is still another cause, entirely commercial, which keeps us lower. Though the wheat fail, the stock is saved; the failure of the wheat raises the price of flesh. There is always something got in which everything is lost with us. Remark the causes of this success, which is due much more to the efficacy of the methods than to capital; and therefore, to preserve you from the phantom of progress, do not repeat any longer, ‘He is rich, and can do everything; as for us, we are poor, and can do nothing!’ Say rather, ‘He is rich and can, and ought to go faster, but in going slower, we will arrive at the goal also.’

“Since, then, capital is a means of hastening progress,—and a powerful means too,—see how the celebrated farmers, of whom we have been speaking to day, dispose of their little patrimony. We shall compare their method of acting with ours. Instead of buying fields at a high rate, they invest their capital in the stocking of the farm; and as the capital increases from the profits, they continue for a long time to invest it there; and when there is nothing which the farm wants—when it is sufficiently stocked with improved animals, with superior implements, and when it is in first rate order—it is then that they commence to

place their profits in investments of good security. And when the years have arrived when their children are established in the world, they retire with them to an enlarged domain, which they purchase with a part of their profits.

“Now, how much do they derive from their money invested in the stocking of the farm? In spite of expenses, often considerable, from burning, liming, irrigating, and draining, which they have frequently to do, even on account of these very expenses, they draw from 35 to 41 per cent.—What do they do who pass for wise with us? As they derive the smallest profit, they buy a small field here, then another there; and they cultivate it badly, and instead of 35, they scarcely make 4 per cent. from their investments. Then the father dies, and his property, already very much divided, is parcelled out still more among his children, who follow the same practice, which is always to be recommenced.

“Thus, while the farmer who, having confidence in his business, has the courage to place his small fortune in it, arrives by degrees to a life of ease; we, who are deficient in that confidence, from being poor, remain poor; and on account of our bad methods of farming, from being rich, we often become poor.

“Then there is engendered a disgust with the business—there is a desire to give it up; and this is so true, that there are few cultivators in these circumstances who do not long for their children for a place in manufactures, in commerce, at the bar, or some other profession different from their own, so that I who address you, and who have a dread of this sort of things, have every year hundreds of applications for different employments. Now, calculate the number of persons to whom such applications are made, and you will have some idea of the number of applicants; and compute the small number of places to give, and you will arrive at the remainder who are discontented, unfortunate, weak, who are more injurious than useful to society. Such is the deplorable consequence of a bad system of agriculture, and of a bad management of one’s means: he is ashamed of and detests the profession of his fathers. And I ask some of you who have been listening to me to-day, and still doubt my words, but are thinking of abandoning your fields for the chances of the town—to go not far from this, and find the sons of some of those honorable men of whom I have drawn a vivid picture to-day, and ask them what business they are following? and they will all answer with pride, ‘The business of our father.’

“The most noble of all the professions is Agriculture, when it is nobly exercised. It is it which nourishes the nation—which gives her her soldiers—which gains her victories. The agriculturist trusts to himself; from God alone he asks for success to his labors; he is independent.”

THE PAMPAS GRASS.

This grass, which attains to gigantic dimensions, was introduced into England some three or four years ago; and from its grand and graceful appearance is beginning to attract general attention for its ornament and beauty. It is a native of Buenos Ayres, inhabiting the vast *pampas*, (whence its name), or level plains extending for hundreds of miles in La Plata, and reaching from near the shores of the Atlantic to the foot of the Andes. On these immense plains, (which contain but few varieties of plants, and scarcely any trees or shrubs,) vegetation is exposed at times to extreme alternations of drought and floods—the *pampas* presenting, at certain seasons, all the appearance of a dry and parched

vegetation, and, at other times, of almost unequalled verdure. The period of blooming in England corresponds with the summer of its native land, and it is inferred from its native habitat, that a sunny, open exposure, with a dry state at the roots while in a dormant state, and an abundant supply of moisture while growing, will very nearly approximate to the conditions of its native climate.

From what appears in the *London Florist*, to which excellent periodical we are indebted for the above facts, this grass would seem to promise more for ornament than utility, and it yet remains to be proved whether, even in England, it possesses any agricultural value. It is a fast grower, attaining to nine or ten feet in height, with several stems and fine spikes of flowers in the course of two seasons. We doubt from the little information that has yet appeared respecting its habits, whether it is sufficiently hardy to withstand a Canadian winter without the strictest attention to its culture and protection.

TREATMENT OF ANIMALS UNDER DISEASE.

The following recipes relate to the more common attacks to which farm stock are liable. They are given for the most part on the authority of Mr. Spooner of Southampton, condensed from the very valuable articles which he contributed to *Morton's Cyclopediu of Agriculture*. It is hoped that they will be of some service to Canadian farmers, especially in such situations where a competent veterinary surgeon cannot be procured.

DISEASES OF THE HORSE.

Megrims or *Vertigo*—Giddiness, the result of determination of blood to the head, produced sometimes by a tight collar, often by high feeding. Immediate bleeding will restore the animal.

Inflammation of the Stomach—Shown by dull appearance, with swollen eyelids—pulse 50 or 60 in a minute, and rather strong—abdomen rather distended, bowels costive, dung slimy, legs warm, appetite suspended, and sometimes great thirst, mouth very hot. Bleeding in the first instance, followed by oily purgatives, such as linseed oil, a pint of which may be given twice a-day till the bowels are relaxed. Plenty of linseed gruel should be given, and with it small doses of nitrate of potash, such as two drachms twice a-day, also small doses of calomel and opium, such as a scruple of each twice a-day.

Stomach Stagners consists in distention of the stomach with food, which, from sympathy, produces an oppression on the brain. Treatment—Oily purgatives, assisted by draughts of warm water, and injections containing a purgative. Stomachics may also be given, such as carbonate of ammonia, two drachms; gentian, one drachm; with spirits of nitrous ether, one ounce twice a day. The disease, however, is very obstinate and fatal, the stomach being frequently distended beyond its powers of contraction.

Colic—*Gripes*—*Fret*—In flatulent colic the symptoms are sudden and acute pain, which causes the animal to lie down and roll violently, looking round and evincing paroxysms of the most intense agony. The abdomen is considerably distended, which, indeed, distinguishes it from *spasmodic colic*. *Stercoral*

colic is gradual in its approach, and less violent in its symptoms, though, at the same time, longer in duration and more obstinate. The pulse in colic is not much increased, except during the paroxysms of pain, and this, together with the intermissions of pain, distinguishes it from inflammation of the bowels. A draught, containing an ounce of tincture of opium, with two ounces of spirit of nitrous ether, will sometimes afford immediate relief. In the flatulent variety, an ounce of sulphuric ether will be better than the nitrous ether, having a greater effect in condensing the gases; to this an ounce of tincture of aloes or valerian may be added. If relief do not soon follow, the horse should be bled rather copiously, and another draught administered, after which oily purgatives, such as linseed oil, one pound, may be given every four hours till three or four pounds are taken, combined with smaller doses of opium, and half a drachm each of calomel and tartarized antimony. In stercoral colic, the last-mentioned treatment should be adopted at first. Frictions, and even hot fomentations to the abdomen, should follow in obstinate cases, with frequent and copious injections.

Inflammation of the Bowels is a much more dangerous disease. Symptoms—Severe pain, though at first not so violent as in colic. The animal lies down mostly, and looks round at the sides. The pulse quick, and often small and thready; the extremities cold; the membranes of the eyelids and nostrils intensely injected. Bleeding is our sheet anchor. As much blood should be taken as the animal can bear, and if the pulse be weak previous to bleeding, an ounce of spirit of nitrous ether, with the same of laudanum, should be given, after which the horse will bleed better than otherwise. Draughts of linseed oil should follow, and a solution of opium every four hours. Hot applications to the abdomen, and frictions to the extremities should be persisted in, with frequent and copious injections.

Diarrhœa consists in the copious and frequent evacuation of the feces in a watery state. New oats and hay have a tendency to produce this derangement, as well as fresh grass, or other green food, whilst beans have a contrary tendency. The treatment should consist in an alteration of the food, substituting that of a more wholesome and binding nature; and if medicine is required, the following may be given in thick gruel, made with flour:—

Ginger, powdered.....	1 drachm.
Gentian, powdered.....	2 drachms.
Opium.....	$\frac{1}{2}$ drachm.
Prepared chalk.....	1 ounce.

To be carefully combined, and repeated twice or thrice a day.

Dysentery is another form of disease of the same membrane, which, however, instead of secreting water, as in diarrhœa, has its natural mucous secretion greatly increased. The treatment should consist of moderate bleeding, and the administration of oily laxatives with mild diluents, such as linseed gruel or tea. Nitrate of potash two, and super-tartrate of potash four drachms, may be given with the gruel several times a day, and bran mashes and carrots may be offered as food.

Worms—Horses are subject to these pests in various forms. The most common is the bot, a short thick grub, which is found, sometimes in large numbers, attached to the internal surface of the stomach by a sort of hook. Unless they are very numerous, or are attached to the villous portion of the stomach, they do not appear to be injurious. The *long round* worm is frequently found in the intestines of horses; and, being generally few in number, does not appear to be very injurious. The *tape*-worm is scarcely ever found in the horse; but the *Ascarides* are the most common, and probably the most injurious. They are small, and thread-like in shape, and are found mostly in the large intestines,

and particularly the rectum, where they sometimes cause very great irritation. Treatment—Unless there is really a want of condition, it is needless to resort to treatment, as the appearance of a solitary worm or two in the dung, particularly if of the long white sort, is a matter of little moment. If, however, worms are really numerous, the horse should have bran mashes for a day or two, after which the following may be given:—

Tartarized antimony.....	2	drachms.
Spirits of turpentine.....	3	ounces.
Linseed oil.....	1½	pounds.

To be well mixed together, and given with great care. After this, the following ball may be given daily, for a week:—

Sulphate of iron.....	1	drachm.
Powdered gentian.....	2	drachms.
Powdered ginger.....	1	drachm.
Powdered pimento.....	1	“

To be made into a ball with treacle. This ball will materially assist in restoring the lost condition.

Catarrh or *Cold* consists of inflammation of the membrane which lines the chambers of the nostrils and the throat. Very slight cases will recover without the aid of medical treatment, a few bran mashes being all that is necessary. In severer cases we must treat according to the urgency of the symptoms. If the pulse is rather strong, as well as accelerated, it is well to bleed. The throat should be well stimulated, externally, with tincture of cantharides. If the bowels are costive, two or three drachms of aloes may be given; but otherwise, the following ball may be resorted to at once, and administered night and morning for several days:—

COUGH BALL.

Nitrate of potash.....	2	drachms.
Tartarized antimony.....	1	drachm.
Digitalis, powdered.....	1	scruple.
Linseed meal.....	3	drachms.

To be made into a ball with Barbadoes tar. Bran mashes, carrots, and other soft food should be given, and in severe cases oatmeal or linseed gruel.

Bronchitis, or inflammation of the mucous membrane lining the bronchial passages or air-tubes in the lungs, is a very dangerous and insidious disease, often creeping on for several days in the form of common cold, and at length, all at once, manifesting alarming symptoms, which terminate fatally. It is safer in this disease to abstain altogether from laxative medicine, and to bleed moderately, and with the finger on the pulse. We may give the same ball as in *catarrh*, and besides stimulating the throat and blistering the course of the windpipe, we should insert a seton in the brisket. In severe cases, counter-irritation should be actively resorted to. Good nursing is particularly called for; linseed and oatmeal gruel should be given with grass in summer, and carrots in winter. When the inflammatory symptoms are subdued, it is well to administer a mild tonic, such as the following:—

TONIC BALL.

Gentian, powdered.....	2	drachms.
Pimento, powdered.....	1	drachm.
Sulphate of iron.....	1	“

To be made into a ball with treacle, and given once a day. Sometimes it may be prudent to omit the iron.

Among chronic diseases, we name *Broken Wind*. Treatment—The horse

should be brought and kept in the highest state of condition, so that he may be able to accomplish ordinary exertion with a less expenditure of muscular exertion, and consequently with less demand on the lungs. The food should be of a concentrated kind, such as oats and beans, so that the stomach should never be distended. Very little hay should be allowed, and no straw, but a fair portion of carrots may be given in the course of the day. If medicine is required, the cough ball recommended for catarrh will be a useful form. Water should only be allowed in small quantities; and the feeding should be so managed, that the horse may not be called upon for much exertion with a loaded stomach. By attention to these measures, great relief can be afforded.

Roaring, if it succeeds an attack of catarrh or influenza, or is accompanied by a cough, is probably owing to thickening or ulceration of the membrane of the larynx; and we should then, by blisters or setons, do what we can to afford relief.

Inflammation of the Kidneys is not a very common disease in the horse. The urine is very dark in colour, sometimes black. There is much fever, with quick pulse, and respiration disturbed from pain. Treatment—Copious blood-letting, followed by a purgative in the form of a draught, with frequent injections. A fresh sheep skin should be applied to the loins, the woolly part outwards, and renewed in the course of twelve hours. This may be assisted by the application of a mustard poultice. Diuretics should be avoided, but a sedative should be given, such as the following, twice a day:—

Tartarized antimony.....	1 drachm.
Opium.....	$\frac{1}{2}$ “
Protochloride of mercury.....	1 “
White hellebore.....	1 scruple.

To be made into a ball.

Diabetes, or excessive staling, is a very troublesome complaint, and sometimes difficult to cure. It is generally produced by unwholesome provender, such as mow-burned hay or kiln-dried oats. Not only is the discharge of urine greatly increased, but it has a sweetish taste, and there is a great falling off of condition. There is also considerable thirst. The treatment consists, in the first place, of a removal of the cause and the substitution of wholesome food, and in the way of medicine, the following ball may be given twice a day:—

Sulphate of iron.....	$1\frac{1}{2}$ drachm.
Gentian.....	2 drachms.
Ginger.....	1 drachm.
Opium.....	$\frac{1}{2}$ “

With treacle to form a ball. Water should not be allowed in unlimited quantities, but it is better to satisfy the thirst with thin linseed tea.

Influenza—This disease has raged as an epidemic from time to time. It appears to be a low nervous fever, attended with great prostration of strength, and affecting more particularly the mucous membranes, sometimes selecting the air passages, and causing sore throat and bronchitis, and at others confining itself more to the alimentary tract, and producing loss of appetite, nausea, and irritable bowels. Treatment—We cannot do better than commence by giving some diffusible stimulant, such as the following draught:—

Spirit of nitric ether.....	1 ounce.
Potassio-tartrate of antimony.....	1 drachm.
Nitrate of potash.....	4 drachms.
Warm water.....	10 ounces.

This may be repeated if required. Unless the pulse is somewhat strong, it is better to avoid bleeding, and in all cases it should be practised with moderation.

If the eyelids are much swollen, local bleeding from the lids and eye veins can be practised with advantage. It is rarely necessary to administer aperients, unless there is much costiveness, and then a very mild laxative will be sufficient, such as two or three drachms of aloes, or five to ten drops of croton oil. After the draught has been administered six hours, the following ball may be given twice a day, for several days:—

Protochloride of mercury.....	2	scruples.
Potassio-tartrate of antimony.....	2	“
Nitrate of potash.....	2	drachms.
Linseed meal.....	3	“

To be made into a ball with soft soap. When the fever is subdued, and debility and want of appetite remain, the following tonic may be administered twice a day:—

Gentian, powdered.....	1½	drachm.
Pimento, powdered.....	½	“
Sulphate of iron.....	½	“
Linseed meal.....	2	drachms.

To be made into a ball with treacle. If there is sore throat and cough, a liquid blister, such as the acetous tincture of cantharides, should be well rubbed into the throat, and in severe cases a seton may be inserted. When the chest is much affected, the sides or brisket should be blistered. The treatment we have advised must be modified according to the symptoms that may be presented to our notice, as it is impossible to lay down a fixed rule for all cases.

Mange is one of the most contagious diseases to which the horse is liable. It is owing to a very minute insect, called the *Acarus equi*, which burrows under the skin, and breeds with great rapidity. Treatment—The skin should, in the first place, be cleared from all dirt, after which the following liniment should be thoroughly rubbed in, and it is better and safer that the whole of the body should receive a dressing:—

Sulphur vivum.....	4	ounces.
White hellebore.....	2	drachms.
Oil of tar.....	4	ounces.
Linseed oil.....	1	pound.

To be well mixed together. Plenty of friction should be employed in rubbing in the liniment, for this friction not only insures the better application of the ointment, but is in itself part of the curative treatment. The liniment should be repeated daily for several days, after which the body should be well washed with soap and water, and the application renewed. Of course the worst places should receive the strongest and most frequent applications. Bleeding and physic are useless in this disease.

Chapped Heels consists of a breach in the continuity of the skin at the heels, and is produced by the application of wet and cold to the legs, so as to inflame the skin and parts beneath. Treatment—The horse should be put under the action of a brisk purgative, during which linseed poultices should be placed on the heels. Forced exercise should be avoided, as the motion will prevent the wound from healing, but a loose box may be allowed. After two days, the following lotion should be applied to the heels, and also to the poultices, which may be continued for several days:—

Sulphate of zinc.....	4	drachms.
Alum, powdered.....	4	“
Water.....	1	pint.

As soon as the physic has ceased to operate, diuretics may be given, and, if

necessary, another purgative. After the irritation has been removed by the poultices and other treatment, the following powder may be applied daily to the chap :—

Powdered chalk.....	1 ounce.
Sulphate of zinc.....	1 drachm.
Alum.....	1 “
Bole Armenian.....	4 drachms.
Mix.	

Grease consists in a very peculiar and offensive discharge from the heels. The treatment should be the same as we have advised for chapped heels, but requires to be more vigorously pushed and longer continued. The occasional application of charcoal will be found useful as an antiseptic, in addition to the other remedial agents. Chloride of lime will also be useful. When allowed to go on unchecked, the heels become covered with excrecence, called *grapes*, which, when they do not occupy a very large extent of surface, may be removed by the knife and caustic, but when they occupy the whole surface of the skin, both of the heels and the leg, a cure is not to be anticipated.

Obstructions in the Gullet, if too far down to be removed by the hand, may be pushed down by a flexible probang, first well oiled, and by its means, with moderate pressure and skill, the body thrust down into the stomach.

Lameness arises from so many forms of foot disease, and is generally removable only by such lengthened treatment, which should be guided by the advice of a veterinary surgeon, that we shall not enumerate here the modes of treatment proper under the several causes to which it is attributable.

Wounds—The treatment of a simple incised wound consists in bringing the divided parts together, and retaining them in such position by sutures or bandages, plasters being for the most part precluded in the horse, in consequence of the hair. In contused and lacerated wounds, a poultice should be applied after the wound is properly cleaned, and the ragged parts removed with a sharp knife, the wound at the same time being sprinkled daily with a little powdered resin. When a healthy surface is secured, the wound may be stimulated daily with a little compound tincture of myrrh, and protected from the atmosphere by an astringent powder, such as the following :—

Prepared chalk, powdered.....	1 ounce.
Alum, powdered.....	1 drachm.
Armenian bole, powdered.....	1 “
Sulphate of zinc, powdered.....	1 scruple.

To be well mixed together. Under such simple treatment very formidable wounds may be cured. The proper treatment of wounds in joints consists in closing the joint as quickly as possible, and before inflammation is set up in the cavity. The horse should not, therefore, be walked any distance after the injury, all poultices must be avoided, or left off if previously applied, and if the opening is but small, the application of the hot budding iron to the wound will often close it at once, but if the opening is too large, the frequent application of a saturated solution of the bichloride of mercury, in spirits of wine, will coagulate the synovia, and thus form a temporary plug till granulations can be thrown out.

Operations are often required in the treatment of the diseases of the horse.

Bleeding is a very common operation, and, unless for some local purpose, is usually performed on the jugular vein, which runs on each side of the neck, from the head to the heart. It may be effected either by the lancet or the fleam; when the former is used, the right is the more convenient side for the

operation, and the left for the fleam. The lancet requires more skill than the fleam. A sufficient quantity of blood having been abstracted, the orifice is closed by passing a pin through the lips of the wound, and winding a little tow round it.

Casting—For the performance of many operations, it is necessary to cast the horse, which is readily effected by putting hobbles or straps round each pastern, to which is attached an iron ring. A rope affixed to one is made to pass through the rings of the other hobbles, and being pulled by several men, the legs are drawn together, and the horse falls, care being taken to direct the fall on a soft bed of muck or straw. Another mode is to use a cart rope, at the middle of which a noose is made, and thrown over the neck; the ends are then passed between the legs and round the heels of the hinder ones, and then through the noose, and being pulled suddenly, the hind legs are drawn forward, and the horse is tripped up and secured. The former mode of casting is much to be preferred, but the latter may be adopted on a rough unbroken colt, when the former mode is not admissible.

Blistering is readily performed by rubbing an ointment of cantharides or Spanish flies into the leg or part for the space of ten minutes. The horse should not be allowed to lie down for two or three days, or to reach his leg with his mouth, for although the majority of horses will not injure themselves, occasionally a serious blemish may occur. The following is a convenient form of blister:—

Lard or palm oil8 ounces.
Venice turpentine.....1 ounce.

which being melted together, the following ingredients may be slowly stirred in:—

Powdered cantharides.....2 ounces.
Powdered camphor.....1 drachm.

An ounce of the ointment will be sufficient for one leg.

Setoning consists in passing, by means of a seton needle, a piece of tape smeared with ointment under the skin, so as to produce suppuration. A seton may thus be passed from the cleft of the frog to the heel, the needle being curved for the purpose. For a more extended acquaintance with the veterinary art, we recommend the study of the works of the following modern authors—Blaine, Percival, Spooner, Turner, White, and Youatt.

The writings of Mr. G. H. Dadd, of Boston, an eminent American Veterinary surgeon may also be consulted by our readers with much advantage. His *American Veterinary Journal*, published monthly at one dollar per annum is a most useful periodical, and ought to be in the hands of our principal farmers.

We hope soon to see the important suggestions of the Hon. Adam Ferguson in the last number of the *Agriculturist*, producing some practical results Canada needs and can support in the best settled districts, regularly educated and experienced Veterinary Surgeons.

POISONED HAY.—A farmer in Ashtabula, Ohio, complains that he has lost seven head of cattle by their eating poisoned hay. It appears that the poison is in the form of ergot, a smutty excrescence which grows on the June grass. It grows as it does on rye, in the shape of a diseased and enlarged seed, of dark color, varying from the size of a wheat grain to three-fourths of an inch long.

RECENT PURCHASES OF IMPROVED STOCK BY THE EMPEROR OF THE FRENCH.

The visit to England some twelve months ago of the Emperor and Empress of the French, appears to have resulted beneficially for agricultural improvement. Mr. Wilson, who is the manager of the royal farms at Windsor, was entrusted by the Emperor to select quite a herd of the best specimens of short-horn cattle that Britain could produce. Accordingly twenty-eight cows and heifers of the breed which takes the very highest rank in the mother country, were recently dispatched to France, with two bulls and eight calves. Of the bulls Prince Alfred had been bred at the Home Farm, Windsor. Master Butterfly 4th, is a son of the renowned Master Butterfly, for whom 1,200 guineas were paid a short time since, by an Agricultural Society in Australia, and from a daughter of Colonel Townley's celebrated cow, Beauty, who has commanded such general admiration. The stock will be located on the model farms of St. Cloud and Versailles. By perseverance in the use of such means, France will be in a fair way of approximating to the high standard which England has long reached in this most important department of a national agriculture.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

Professor Way, who has for several years been the consulting chemist of this Society, has resigned, and Professor Voeleker, of the Royal Agricultural College of Cirencester, has been appointed to fill the vacant post. The former by his patient researches and careful deductions has done much to advance the modern science of agricultural chemistry, and, from what the latter has already effected in this particular department, there is every reason to hope that Professor Way will be followed by a worthy and efficient successor.

The Society's Annual Exhibition will take place this year in the ancient city of Chester, commencing July 19th, the Corporation contributing £1,800 towards the local expenses.

We may also state further that the Exhibition of the Highland Society of Scotland, will be held in the old granitic city of Aberdeen, commencing the 31st of August.

THOROUGH-BRED HORSES FOR OREGON.—Mr. John P. Welsh, who purchased of John B. Burnet, of Syracuse, the celebrated thorough-bred horse *Consternation*, for \$3,500, with the intention of taking him to Oregon this season, as, as we are informed by a gentleman who saw Mr. Welsh a few days since, concluded to let *Consternation* stand in Kentucky the present season, to serve thorough-bred mares. Mr. Welsh has purchased in Kentucky, *Rifleman*, a very superior thorough-bred colt of great substance, and promising to be a most valuable horse. *Rifleman*, bay colt, foaled May, 1855, by *Glencoe*, out of the dam of *Marksmen and Prazier*, winner of the first prize in the ring for thorough-breds, at the Fayette Co. Fair, held at Lexington, Ky., and also at the State Fair at Paris, Ky., in the year 1856.—*Country Gentlemen*.

OBITUARY.

It is our painful duty to record the death of Mr. William Mundie, Landscape Gardener, at his residence in Hamilton, on the 9th of April, aged 47 years. Mr. Mundie was a native of Aberdeenshire, and emigrated to this Province some twelve or fourteen years since. He was the first to bring into practice the most approved principles for laying out and ornamenting grounds, gardens, cemeteries, &c., as several places in different localities fully testify. Among his earlier efforts may be mentioned, the gardens and shrubberies of several private residences in the suburbs of Hamilton, Toronto, and other places. The Normal School grounds evince the taste and sound judgment which he brought to bear on matters of this sort. Mr. Mundie took a warm interest in all efforts for the diffusion of correct taste and knowledge of the beautiful objects of his profession, as the valuable paper which he read before the Toronto Agricultural and Horticultural Club, on ornamental planting, gardening, &c., and published at the time in this journal, amply testify. His removal is a public loss; but the results of his labors will endure, and long remain as monuments of his professional taste and ability. The writer of this brief notice had the pleasure of an intimate acquaintance with the deceased, both in his public and private relations, for several years, and most cheerfully testifies to the high worth of his character, and the pains-taking spirit and conscientious fidelity, with which he discharged his professional duties. He was a man of deeds rather than of words, and the confidence reposed in his judgment and integrity of purpose, was never found to be misplaced. Let us hope that others will rise up, and carry on to a greater extent and perfection, the work which he so successfully commenced.

NO FALLING OFF.—We are pleased, says the *Country Gentleman*, to learn that breeders of improved stock have so little cause for discouragement in the general dullness that has much diminished or altogether frustrated so many branches of business. The demand for Short Horns, for example, is probably increasing more than enough at the east, to make up for any lack of Western purchasers that may have arisen, partly from the largely increased number of fine herds now in condition at the West to meet the home demand, and partly from the general scarcity there of funds available for transmission. We have recently recorded several sales of short-horns to the New-England States, and may now add the disposal by Mr. Thorne, of Dutchess Co., of a number of superior animals in this direction. Among them are the cows 'Cypress' and 'Constance' to A. H. Beach, Esq., of Merwinsville, Ct., and 'Lady Millicent' to J. H. Thomas, Esq., of Vermont—all imported. We are also informed that Raw Jackson, of Ohio, has recently purchased from the same herd the young bull 'Inca,' and G. W. Coffin, of Dutchess Co., the bull 'Argyle,' got by '2d Grand Duke.' What is rather unusual in so large a herd, we believe that Mr. Thorne has no males now for sale—having already this spring disposed of what could be spared from his herd.

HONOR CONFERRED UPON AN AMERICAN GEOLOGIST.—Prof. James Hall, the Geologist, has been awarded the Wollaston medal by the Royal Geological Society, the first instance of the award of that honor to an American. Since 1856, this medal has been struck in Palladium, in commemoration of the discovery of that metal by Dr. Wollaston.