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EDUCATIONAL NOTES.

CANADIAN.

Mr. William J. Phœnix, of Agincourt, has been appointed headmaster of the Public Schools at Markham.

The Council of the Township of Bertie have passed a by-law authorizing the sum of $3,226 to be levied for school purposes.

One hundred and twenty-one candidates presenten themselves for the entrance examination of the Ottawa Collegiate Institute.

The Manitoba College opens on the 3rd September for all departments. Scholarships are awarded at the entrance examination.

Mr. Alfred Stunden, of Gananoque, has been appointed English Master in the Stratford High School, at a salary of $600 per annum.

In Ontario, it costs $8 to train a candidate for a third class certificate and about $34 for a second class certificate, in the Provincial Model Schools.

The Ontario Agricultural College reopens after the summer vacation on the 3rd October, with accommodations for 40 additional resident pupils.

Mr. Ferguson, Inspector for South Grey, was recently presented with a gold watch by the teachers in his district, as a mark of their appreciation of his services.

The Rev. A. Burns, D.D., LL.D., has been appointed Principal of the Wesleyan Female College at Hamilton, in place of the Rev. Dr. Rice, who resumes pastoral duties.

A very successful Sunday school Parliament has been held at the Thousand Island Park, at which Rev. Dr. Townsend, of Boston, Dr. J. L. Humphrey, and Rev. Dr. Castle, of Toronto, took part.

Dr. Palmer, Principal, and Mr. A. Christie, Bursar, of the Ontario Institute for the Deaf and Dumb, represented Canada at the recent convention of Instructors of the Deaf and Dumb held at Cincinnati.

The *Canada School Journal* of this month contains a likeness of the Rev. Dr. Davies, Principal of the Normal School at Toronto. The engraving is but fairly executed. The usual biographical sketch accompanies the portrait.

The eighteen pupils who were recommended by the local examiners as entitled to have passed the entrance examination to the Kingston Collegiate Institute, have all been confirmed by the High School inspectors. This reflects credit on the Local Board.

Queen's College, Kingston, has decided to accept the Intermediate High School examination as a substitute for the ordinary matriculation examination, except that all candidates must pass an additional examination in classics, and the regular work of the college must be taken by all candidates for honors.

The average attendance at the Waterdown High School for the past half year was 66, and the Hamilton *Evening Times* says it is increasing rapidly. Twenty-five pupils obtained certificates at the last examination, and considering that the school has only two teachers this is doing very well indeed.

Under the present law, County Councils are not obliged to aid the Model Schools in their districts. The action of the Wentworth County Council in refusing a grant to the Model Schools has brought the matters to a crisis, and the Minister of Education states that it is his intention to make this duty compulsory.

In the Province of Quebec, all French teachers of Protestant schools are expected to know English as well as French. In fact at the last meeting of teachers in connection with the Laval Normal School a discussion was to take place on the subject as to whether as much time should be spent on the study of English as the study of French.

The *Canada School Journal* says that the number of candidates for first class certificates at the recent Ontario examinations did not average one for each county. Of those who succeed in obtaining a first class certificate for the first time there will be probably, on an average, one for every two counties in the Province. The deterring cause is the extent, rather than the difficulty of the work, as there are too many subjects embraced in the programme for one examination.

The Manitoba *Free Press* says that Dr. Adam Thom, the former Recorder of the Province, has made a handsome donation to the St. John's Ladies' School in the form of a library, which has just arrived from England, and is already in use in the school. It consists of upwards of 300 different works, many of them in several volumes, and embraces every subject—theology, history, travels, science. There are besides a fair selection of lighter literature for the pupils' reading.

A circular was read in all the Catholic churches of Toronto on Sunday, the 11th inst., relative to the recent investigation of Separate School matters, which have been the subject of some severe controversy lately. The circular embodied the resolution which was passed at a meeting (with only two dissentient voices) held at the Bishop's palace, expressing confidence in the management of the schools. The investigation showed that instead of the Episcopal Corporation taking any money from the schools, it had largely contributed towards them.

FOREIGN.

Prof. H. R. Hutton, of the College of the City of New York, died recently, aged 52.

The writers at the Martha's Vineyard Hotel are all students from Brown University, of Providence.

The faculty of Harvard College have decided hereafter to publish in their catalogue the names of students who obtain scholarships.

A Massachusetts lady has pledged $25,000 for the endowment of a professorship in the Theological Department of Oberlin College, Ohio.

Mr. Wm. McDonald, M.A., of the High School, Edinburgh has been appointed rector of the High School, Dunedin, Otago, at a salary of £1,000 per annum.

On the prize day, at Stonyhurst College, England, additional interest was given to the proceedings by laying the foundation stone of a new building, which is to cost £12,000.

King's College, Cambridge, has just erected a school-house for its choristers. The vacancies in the choir are thrown open to public competition and board and education are free.

The Dartmouth College Fletcher Prize of $500, given every two years for the best essay on worldliness in the church, has been awarded to Rev. A. T. Dickson, of Tuscaloosa, Alabama.

Judge Hastings, of San Francisco, has paid to the State Treasurer of California $60,000 of his subscription of $100,000 for founding a college of law. The State will pay annually to the institution seven per cent. on the same amount.

A Mr. Samuel Sharpe has given the sum of £5,000 towards the building of the north wing of University College, London, as soon as the Council are prepared to begin. The sum of £50,000 is required to complete the proposed extensions.

A memorial has been presented to the Earl of Beaconsfield, K.G., by a number of gentlemen professionally interested in the promotion of higher education in London and vicinity, representing their strong conviction of the importance of giving increased prominence to the study of ancient art as a branch of classical training.

A convention of the friends of public education in the South, for the purpose of organizing a Southern Educational Association, was held at Chattanooga, Tenn., on the 6th, 7th, and 8th inst. Prof. Vance, of the Carlisle Normal College, occupied the chair. The convention was organized into the Southern Educational Association, and George A. Chase, LL.D., Principal of the Louisville Female School, was chosen President, and Prof. Vance as Secretary-Treasurer.

FARMER'S CLUB

VISIT TO WINDSOR CASTLE AND THE ROYAL FARM.

Editor of the Weekly Mail—I have picked up some more information concerning the manufacture of beet root sugar since I wrote to you last, but will reserve it for another letter which I will devote to that subject. At present I propose to give you a few notes of my visit to the Royal Farm, which will no doubt interest loyal Canadians. On leaving Paris for London Mr. Owen, Secretary of the Royal Commission, who has shown every kindness to the Canadian Commissioners at Paris, learning that I intended visiting the Royal Farm, forwarded letters of introduction through Dr. May to Sir Thomas Biddulph, K. C. B., and Mr. William Seabrook, Inspector of the castle. The first named gentleman not being at home I was received in the kindest manner by Seabrook, who is a most hospitable English gentleman. I was shown through the Castle to my heart's content. Everything both in and out of the Castle is kept in the most perfect order. After lunch I was driven to the farm, and introduced to the manager, Mr. Tait, "a cannie Scotsman," with whom the change of climate appears to agree. There are 800 acres in the farm, only about 200 acres under crop, the balance hay and pasture. This farm is kept in a high state of cultivation. The crops are all very heavy, the fall wheat has to be cut with reaping hooks, being so heavy and badly lain the paper would not cut it. I noticed a fine field of fall oats nearly ripe, and a field of fall beans. The farm buildings are commodious, and very conveniently arranged; they are all constructed of brick. The stock are principaly short horns, being 150 in number, also a few Alderneys. I was shown a young bull, eighteen months old, which is hired for the season at 200 guineas, from Mr. Booth, of Warlaby. The horses kept in the Royal farm are heavy draught. I was shown two fine stallions, three-years-old, one of them a pure Clydesdale. At present there are about 100 swine, principally Berkshire of the purest strains. I noticed a noble animal 16 months old, a prize taker. They also keep a large number of the Prince Albert Windsor swine, which for early feeding are superior to any other. They are an improved Suffolk. The Royal dairy is an elegant room, 37 feet long by 23 feet wide. The windows are of stained glass. There are streams of cold water flowing under the pans. Everything about the dairy is kept strictly clean by the dairymaid. On making enquiries here, I found they used the old barrel churn, as that was the churn used when the Prince Consort was living. The Queen does not want any change.

The poultry house is a long building, with a walk (or hall) the whole length on one side; the other is divided into rooms of 12 or 14 feet square. Each room has a door opening into a yard which is enclosed by a high wire fence, so that every breed of fowl are kept entirely separate from each other. At a short distance is the Royal Kennel where every variety of dogs are kept, both foreign and native. The building and yards are similar to the hennery. The Royal Gardens contain in area 30 acres, and are enclosed with a brick wall 12 feet high. There are ranges of glass houses about 1,000 feet in all, where peach, grapes, nectarine, peaches, and other fruits are grown, as well as vegetables of all kinds for the Castle. This is said, to be the most complete vegetable garden in the world. It certainly reflects much credit on the head gardener, Mr. Jones, who proves to be at the head of his profession, as all kinds of fruit can be seen growing in this garden to perfection.

The Queen has a room nicely fitted up in the gardener's house, with a library on horticulture, also at the farm house, with a library on agriculture. She has similar rooms at the hennery and kennels. When out for a drive the Queen frequently calls for half an hour or more, and takes an interest in looking through the libraries. All speak in the highest of Her Majesty.

Yours truly,

WM. RENNIE.

COMMON AILMENTS OF LIVE STOCK.

DROPPING IN COWS.

(Continued.)

Puerperal Fever.—The second form which occasions dropping at calving is named "puerperal fever;" it is the true "milk fever" of cows, and it is likewise known as "puerperal peritonitis," and "metro-peritonitis," terms which are of greater use to the medical man than to the proprietor of stock. We shall continue to use the term "milk fever" throughout the whole of this article, not only for the sake of ease and simplicity in description, but also for clearly defining the differences between this and other forms of dropping at calving.

Milk fever is generally seen among cows that have had a difficult time in calving. When the calf is large, pains are strong, much force is used, and many hours are occupied in delivery. During such cases there is much opportunity of damage in the walls of the womb by extraordinary efforts to expel the calf; inflammation of the blood-vessels follows—phlebitis, together with the various tissues of the organ, which is of the nature of erysipelas. The covering of the womb—peritoneum, an extension of the same membrane which lines the abdomen throughout, as well as forms a complete investment for the intestines and all other organs of the abdomen, likewise partakes of the same disease, and this extends, more or less, frequently proving fatal to the animal.

When the membranes—placenta, happen to be retained too long after calving, they are likely to give rise to milk fever; decomposition taking place, the dead and putrid elements are absorbed by the mucous surfaces of the womb, and thus a poison is carried into the blood vessels. Sometimes the discharges from the uterus may be re-absorbed and produce this; such discharges, we wish to point out, as are the result of morbid action, itself the offspring of the effects of difficult labour.

Cows of all ages are liable to it; overdriving and exposure, together with bad feeding and management are fruitful causes, as engendering a state of system in which erysipelas is most readily produced.

The signs of milk-fever are very remarkable, and when once accurately noted, may be easily remembered. It rarely appears before calving, but mostly appears soon after, and the fatality or mildness of the disease may generally be estimated by the time at which the animal first appears to be attacked. Early cases are generally the most severe, of longest duration, and most fatal; the longer the cow remains free from the attack the more likely she is to have the disease in a mild form and recover early. The usual course is for the signs to appear within a few hours after delivery, but many cases are delayed even until the third and fourth day. In the first instance, the signs rapidly follow each other; in the latter, they are slow and gradual, and seldom gather the intensity to be seen in the first.

The early symptoms are defective appetite rumination has ceased, and the milk has diminished largely. The cow is restless, and wanders about, moaning plaintively. There is evidence of fever, as cold legs, hot mouth, and increased temperature at the roots of the horns. If the thermometer be passed up the rectum, an increase of animal heat is shewn by it also. Pains begin in the abdomen, and the cow switches her tail, stamps, and kicks at the belly with the hind legs. She turns the nose frequently to one of the flanks, moans and tries to lie, but evidently does this as carefully as possible often remaining some time on the knees before finally settling down. When she rises the same peculiarity may also be noticed. As the case proceeds, pain becomes more constant and acute; the bowels are confined, the pulse is rapid, and possesses no volume, but is small and thin—like a wire beneath the finger; the paunch swells from the formation of gas inside, and the cow strains violently; the head is thrown from side to side, and shortly she becomes insensible, when death speedily follows.

After death we may observe the uterus is inflamed throughout its structure, and besides large quantities of straw-coloured material being present, pus is not unfrequently found, with here and there large patches of dark red, purple, or even black patches, and a chocolate-coloured fluid, sometimes in tolerable quantity, inside. The same conditions apply to some other organs of the abdomen, and the brain is found to be congested, as a result of the blood poison engendered late in the stages of disease.

In the treatment of the disease great reliance is to be placed on *early bleeding* and *purgation*; but this must be regulated entirely by the state of the pulse. If insensibility have set in, and the volume of the artery is small, beats weak and rapid, no good is to be effected by bleeding; it will only then hasten death. When the artery is full and the pulse is beating hard and vigorously, then we may bleed and purge with advantage. The quantity taken must not be regulated by the size of the beast, but by the pulse. While the blood flows the finger should be on the artery, and, waiting for the first signs of diminution and weakness, the operator should be occupied by nothing else, that he may be ready to close the wound and prevent fainting.

The purge should be a brisk one, an extra quantity of salts being employed, say one-half or two-thirds more than for a mild dose, with which 2 or 3 ounces of ginger and 2 lbs. of treacle should be mixed, and the whole washed carefully down with at least 3 quarts of warmed ale. Injections of soap and water are to be given every thirty minutes to promote the action of the salts, and the skin should be sponged with tepid water, and three or four men set to work to wisp it down with soft haybands until proper warmth and circulation are established, after which the animal may be left for two or three hours covered with sacks and straw heaped over her body.

By this time a veterinary surgeon has probably been called, who will conduct the future treatment of the case; but if such assistance is not forthcoming, we may advise the following draught:—Acetate of ammonia, 4 ounces; nitric ether, 1 ounce; tincture of aconite, 30 drops. Great care, however, is required in the future use of this remedy, as awkward results are not uncommon in the hands of strangers to medicine. It will be safer to omit the aconite, and persevere with the acetate of ammonia and nitric ether every four hours, until the pulse becomes slower and fuller, which, together with the return of circulation, warmth, and usual cheerfulness, may be estimated as very favourable signs.

When it so happens that blood-letting is not admissable at the outset, the purge should be given only, the rest of the treatment as detailed being carried out; and when insensibility has set in, the medicine must be passed down the gullet by means of the probang or stomach pump, as any other means will choke the cow at once.

When pain is severe and constant, some relief may be obtained by injecting various fluids beneath the skin, as tincture of belladonna, chloral hydrate, &c. indeed, this promises to become one of the most useful branches of practice, and by which greater results follow than by any other known method.

CARE OF DAIRY STOCK.

Mr L. S. Wood, of Pomfret, is one of the most successful dairymen in Vermont. At a recent meeting of the Board of Agriculture, Mr. Wood read a paper giving an account of his methods of rearing, feeding and caring for his cows. We find the following extracts from his paper in the *Green Mountain Freeman*:—

The care and feed of dairy stock is a subject in which all dairymen should be much interested, as their success greatly depends upon skillful management in these particulars.

Though in favour of the careful selection and breeding of dairy stock, I still maintain that the profits of any dairy will depend in a great measure on good care and liberal feed. It is an old saying, that "what is worth doing at all is worth doing well," and in no case is it more true than in keeping stock; an animal that is worth keeping at all is worth keeping well. The successful breeder as well as dairyman must see that his stock is kept comfortable and quiet at all times. In summer it may be turned to pasture, and should be taught to stay where it is put. This I consider one of the most important things to be thought of in the way of care. I have always noticed when stock of any kind get the habit of getting out of the pasture and running where they please, even if they please to run in the mowing or cornfield, they will not do well; they become restless and uneasy, often stoned, chased by dogs, made wild, and many times otherwise injured. The best and cheapest way to teach them this is to see that the fence is properly repaired before they are turned out. A sufficient amount of feed, plenty of running water, and salt once or twice a week is all that is necessary for young stock. Cows that are to be driven to and from pasture should never be chased or worried by boys or dogs. If driven slowly and carefully they may travel a mile or more each way, without any perceivable injury. Cows are creatures of habit, and will learn to be at the bars at about the same time, and should be driven and milked as nearly as possible at the same time each day. The same person should, if possible, milk the same cows through the entire season. No harsh treatment to the cow or loud talk among the milkers should be allowed, but milking should be done as quickly as possible and in the most quiet manner. In my own dairy, I have cows that think they must be milked first, and as soon as I go into the yard with a pail, will follow me until I stop and milk them. This habit of theirs I take pleasure in gratifying. The time of milking should be regular. My own time is about the first chore in the morning and last at night, always milking by daylight. After milking at night in summer the cows are all tied up in the barn and fed, on an average, three pints of corn meal, and then turned out to lie in yards, or under the sheds if stormy.

When the feed falls in consequence of drought or any other cause, I feed fodder corn, all they will eat as long as it lasts, or until the frost kills it. If not allowed to go to fall feed at this time feed rowen. At this season of the year I mix meal and bran together in equal parts, and feed from two to three quarts of the mixture through the fall and winter, or as long as they are in milk, which is about ten months. Cows that come in in the fall and winter will require more feed; and if good milkers, may be fed, with profit, twice the amount named, while giving a large flow of milk; but should be fed less the summer following.

Care should be taken to have plenty of good sweet, early-cut hay to feed while they are giving milk. Corn fodder is very good feed for cows, but I think it poor economy to feed straw to them; It cannot be made equal to hay by feeding more meal; they will not keep up a good flow of milk, and cows may be dried up by feeding too much corn meal, especially at the season of the year when they are inclined that way. When dry they may be fed poorer hay and coarse fodder. If the cow is in proper condition or out at pasture, do not feed meal.

Cows should have good, comfortable winter quarters; should not be out in the storm or cold winds, but they enjoy sunshine and pleasant weather. If kept in the stable through the day should be watered morning and night, and fed at least three times, unless the Barre system of feeding is practiced, which is to feed continually in the morning, a little at a time, until about ten o'clock, when they are allowed to rest until three in the afternoon, when the same process is repeated until they have eaten enough.

In my own dairy the time for having cows come in is at all times of the year, but probably more in the fall than at any other time. If properly kept, a good yield of butter can be made, and of good quality throughout the winter. Calves can also be raised at this time of year to quite as good advantage as at any other time. Cows kept in this way will be in good condition when dry and may be kept on coarse fodder until near the time of coming in, when they should have good hay and two quarts of oats daily until they calve, and then should have light feed for a few days with warm water to drink and a warm, dry place.

The calf is allowed to be with the cow until two or three days old, when it is taken away and taught to drink if it is to be raised. It is an easy matter to teach calves to drink if done at this age, but more difficult as they grow older. The calf should not be allowed to get too hungry. The practice of letting it go over one feed before trying to see if it will drink, and a second if it does not drink readily and without spouting a part through its nose to the great discomfort of the feeder, is useless and barbarous, and should never be practiced. A little patience and good temper, with the aid of the finger for a few times, is all that is necessary to teach a calf to drink.

Fall and winter calves may be turned out in the spring, but spring calves will do much better to be kept up through the hot weather. I might tell you how the calf should be fed and cared for until it comes to maturity, but time and space fail, and the whole subject requires a more ready writer to do it justice; so as I am a practical dairyman I leave my paper for my milk pail, lay down my pen and take up the meal dish, sure of the sympathy of my brother farmers when I say it is easier to do these things than to write about them.

FOOT-ROT IN COWS AND SHEEP.

Mr. C. A. Viets writes to the *Tribune* from Portage Co., Ohio, about three cows which have "cracked and formed unhealthy sores above the heels, and are now unable to go to pasture. Milk well and seem in good general health." This is probably caused by the prolonged wet weather, and by standing in mud. It will be well, however, to see that they do not feed on grass that has run to seed and become ergoted, or on corn affected with smut, as the most dangerous sores of the feet occur from this cause, and often result in gangrene. Put the feet for twenty-four hours in a large poultice of wheat bran, sprinkling the surface with a litue finely-powdered sugar of lead. Then dress with wood tar, having first washed the sores with a solution of ½ oz. blue stone in a quart of water. Bind the parts up to protect against filth, and keep on a dry, clean floor.

A benevolent gentleman has published the following in the London *Times*, with a request that "provincial, colonial, and foreign papers will please copy":—

In the interests of agriculturists generally, I feel it a duty to publish a remedy which I have found quite a success in the treatment of foot-rot in sheep, viz., calomel, 1 oz., and precipitated chalk, 3 oz., well mixed together. Cleanse the parts affected, and apply the dry powder every third day. The sheep should be housed at night and have plenty of dry litter.

Calomel is one of the best dessicants and astringents in cases of this kind, and will act quite as efficiently without the chalk. The main objection to the agent is its high price comparatively to sulphate of copper and other astringent caustics which prove very effectual in foot-rot.

Sheep will eat what no other stock will eat, and thus save the labour required by the thrifty farmer to keep down noxious weeds.

A poultry fancier has found that lice will not venture near a sitting hen in whose nest two or three tobacco leaves have been placed.

Mulch plants and trees heavily, and then all the watering you give them will be beneficial. Watering without a mulch is detrimental as a rule.

Oats are baked in France and Germany and used for horses' food in loaves. This is reckoned a very economical use of the article. A pound of oats is equal to two pounds of the best clover hay.

A German journal recommends ridding damp cellars of mould and all fungus growth by burning in them once in two or three months some "stick-sulphur," all doors being closely shut during the two or three hours while the fumes are doing their cleansing work.

"Rural jr.," thinks it about time everybody knew that "bees are deaf as a post," and that the beating of all the tin-pans in two counties would not restrain a departing swarm. His way is to throw among the flying mass water, or the sun's rays by means of a mirror. The latter plan he has never known to fail.

The big plough on top of Quincy market has just been outrivalled by one which has been constructed at La Crosse for actual use by the Chicago, Milwaukee and St. Paul railway Company. This peculiar plough will cut 17 inches wide and 18 inches deep, and is to be drawn by a steam engine, and to be used in making railroads in the West. It was ordered by persons in Milwaukee. It cost $200.

THE POTATO BEETLE.—What eats the Colorado potato beetle—Crows, quails, rose breasted grosbeaks, ducks, chickens, Guinea fowls, skunks, toads, black snakes, grand daddy long legs, yellow mites, lady birds, rust red social wasps, tiger beetles, ground beetles, soldier bugs, tachina flies, asilus flies. Cut this out and post it where you can always see it, and don't destroy any such friends, for they destroy many other insects as well.

A writer sends to the Elmira Farmers' Club the following cure for galls on the shoulders of draught animals, which he says is the best he ever used:—Dissolve six drachms of iodine in half a pint of alcohol, and apply it on the sore with a feather as soon as the collar is removed, and when at rest twice a day, morning and evening. The article should be in the stable of every farmer, as it is an excellent application on horses where the skin is broken by kicks or other accidents, and is a sure cure for splints if used in a proper manner.

Pests now run riot with the stock. The bot-flies are perhaps the worst. Wash their eggs from the legs of horses with warm water, or scrape them off with a knife. Protect cattle from the bot-fly, which lays its eggs on the loins, by rubbing a little crude petroleum on the backs of the animals. Tar sheep's noses to keep the sheep bot-fly from laying eggs in their nostrils. These means of prevention will add much to the comfort of the animals. By keeping stables clean and dark, the hateful black-fly (*Stom oxys caltricans*), in general appearance so much like a house-fly, will be less annoying.

THE GRASSES,

The annual value of the grass crop in the American States, exceeds three hundred million dollars. An improvement, therefore, effected by procuring the best sorts for sowing, or by a better system of management, that shall increase the average crop but *one-tenth*, will add to the aggregate product no less than thirty millions. There is no question, however, that a much greater increase than this might be readily effected; for while the average product of hay per acre is not more than a ton or a ton and a half, the best farmers cut from two to three tons. There is nothing, therefore, but a want of intelligence and skill, to prevent an increase of value amounting yearly to at least three hundred million more. The subject is will worthy of more consideration than it commonly receives.

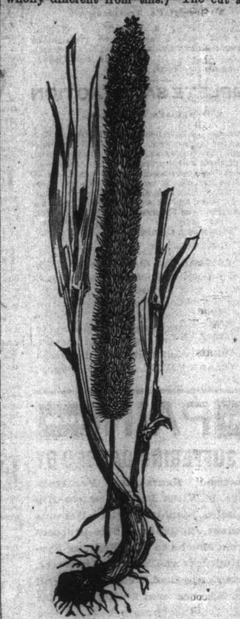
There are two ways of increasing the crop. The first is, to procure the best kind of grasses; the second, to improve the cultivation or management. A notice of some of the most valuable species, with their qualities and characteristics, may assist in promoting the desired improvement.

The number of grasses which are highly esteemed in this country, for medows and pastures, is very few. With many farmers, timothy, red-top, and June or Kentucky blue grass, constitute the entire catalogue. Ther are many hundred known species, some of which, if they could be subjected to proper cultivation, would doubtless prove valuable; and the enterprising cultivator who, by undertaking the task, should introduce, out of the great multitude, but one equal in value to timothy or Kentucky blue grass, would richly deserve the thanks fo the whole country. The object of this brief article is to point out those of most merit which have been already tried. Its limits prevent a scientific description of the minute parts of the flower, by which alone the numerous species are accurately distinguished from each other. The cut which are given are correct representations of the most valuable kinds, and, carefully observed, with a little additional description, will enable the reader to recognize them at once.

There are a few general terms that every one should understand. For example, the head of wheat, barley, rye, or timothy grass, growing in an oblong, compact form, is termed a *spike*; and the loose and spreading head of oats, and June grass, is called a *panicle*. The *spikelets* are the small spikes on the panicles, often consisting of several seeds and chaff, as in the chess plant, where the spikelets are about an inch long, and often hold a dozen seed; or in the June grass, where they are only about the tenth of inch an long, and contain five or six seeds. A spike, as in timothy grass, is also composed of spikelets, but they are less distinct or more crowed together.

DESCRIPTION OF THE MORE COMMON SPECIES.

Timothy, or *Herd's grass* of New England, and *Cat-tail* of Britain—*Phleum pratense*. (The Herd's grass of Pennsylvania and the Southern States is the Red-top, wholly different from this.) The cut affords an accurate representation of this grass when in flower. The root is perennial, and often slightly bulbous. This is probably the most valuable of all cultivated grasses, and especially so for hay. It is rather coarse and harsh if left uncut too long, but mown when in blossom, or immediately after, it constitutes excellent fodder. Another advantage of cutting rather early is the after-growth, which is tardy and scant if the seeds ripen. The chief objection to this grass is the want of a good second crop; but when sown with clover, the latter supples the deficiency, and when, in a year or two, the clover disappears, June grass often comes in and is a valuable successor, where pasturage is the object. It succeeds best on rich and rather moist soils. It is an admirable crop for reclaimed marsh or swamp. At least one peck of seed is sown by good farmers, per acre, and a larger quantity will give a heavier crop, and softer and finer hay. It may be sown as a crop by itself, either in autumn or early in spring, and brushed or very lightly harrowed in. If early in autumn, it will give a good crop the next year: and a moderate or fair one the same season, if sown in spring. Three tons of hay to the acre, when plenty of seed has been used on fertile land, are not rare. It gives a large product of seed when allowed to ripen, varying from ten to twenty bushels per acre.



TIMOTHY.

This grass has been called Herd's grass, from Herd, of New England, its supposed discoverer; and Timothy, from Timothy Hanson, of Pennsylvania, who largely cultivated and introduced it to notice. Who will introduce another grass of equal value, from the hundreds of wild species?

Meadow Fox-tail Grass—*Alopecurus pratensis*. The flowers grow in a spike, somewhat like timothy, but the spikes are shorter, and feel soft to the touch, while that of timothy is rough. The spikes appear earlier, but it grows too thin and light for hay; it makes, however, a fine early pasture. It would probably be a good mixture with other grasses in seeding down to permanent pasture. Flint says that on account of its light and bearded chaff, there are but five pounds in a bushel, and 76,000 seed to an ounce. This would be six million to a bushel, which would seed about an acre.

The floating foxtail—*Alopecurus geniculatus*—resembles the preceeding, but is later, and grows in water. It is found in wet meadows, ditches, and marshes: It is of no value, unless possibly it be for furnishing pasture on flooded grounds, where other grasses will not grow.

Cut-grass or False Rice—*Leersia oryzoides*. Flowers in rather one-sided panicles, coming out late in summer, stems two or three feet high; the sheaths of the leaves which clasp the stems are exceedingly rough when drawn downward through the hand, owing to the very small points or minute prickles pointing downwards. The general colour of the heads or panicles is a yellowish green. It grows in swampy meadows, and along the margin of turbid streams. It is a weed in the North, but is cultivated to some extent in the South, and cut as hay. It will not flourish on dry or drained land, and hence thorough draining will destroy it.

Red-top, Herd's grass of Pennsylvania, and the South—*Agrostis vulgaris*. The flowers are in a loose, open panicle; the spikelets are one-flowered or one-seeded; and the whole head has usually a reddish purple colour, very conspicuous where growing in quantity in meadows. It grows about two feet high. Roots creeping. This grass is widely known. In England it is called *Fine Bent*. It succeeds better on rather moist soils, where it is one of the most valuable grasses, although as a whole much inferior to timothy. It is well adapted (like June grass) to sow with the latter, and forms a dense sward over the surface, which otherwise is left bare after cutting timothy for hay. It is perennial, and

RED-TOP.

makes good permanent pasture, in which it should be fed down so as to prevent going to seed, which renders it unpalatable. It is one of the best lawn grasses, and, sown with June grass and white clover, forms with weekly mowing, a beautiful green carpet. The seed is small, and four to six quarts usually seed an acre.

English Bent or White-top—*Agrostis alba*—resembles Red-top in general growth, but differs in having a light green and sometimes faintly purple panicle, and by the roughness of the sheaths of the leaves. It is of little or no value. A variety known as the *Fiorin* grass—*A alba*, var. stolonifera)—was once in high repute, but it is now regarded as little else than a weed, difficult to eradicate, on account of its rooting recumbent stems. It grows in wet places.

There are severel other species of Agrostis, but they have not been found valuable.

Nimble Will—*Muhlenbergia diffusa*—has a slender, branched stem, with several narrow, slender panicles; the chaff has a slender beard about a twelfth of an inch long. In Kentucky and Tennesse, it forms a pasture grass of some value, but cannot be recommended for sowing.

Blue Joint grass, or Canadian Reed grass—*Calamagrostis Canadensis*—much resembles Agrostis in its general character; it is a large grass, sometimes growing three or four feet high. The panicles are often of a purple hue; are stiffly erect, at first contracted or narrow, some what resembling a spike, but afterwards more spreading. The inner chaff has a fine bristle on the back, a little below the middle. It is common on low grounds in many places, and is regarded as a valuable grass, being being both nutritious and palatable. It is said to be abundant and much esteemed about Lake Superior. It deserves more attention from agriculturists.

Sea-Reed—*Calamagrostis arenaria*. The panicle is long and close, or spike-like, nearly white, leaves smooth, root (rhizoma) branching and creeping extensively in the sand. Often two or three feet high. It is not cultivated for agricultural purposes, but by holding the sand on the seacoast, where it would otherwise drift, is of great value. It has been extensively planted along the shores of Cape Cod, and has saved buildings from being buried by sand.

Orchard grass—*Dactylus glomerata*,—is accurately represented in the cut, as it appears when fully grown, but when the panicle first appears, the parts are more closely crowded into nearly one cluster. It flowers earlier than timothy, or about the time of red clover, which renders it better than timothy in this respect to mix with clover. It is, however, objected to as

ORCHARD GRASS.

hay, on account of its coarseness. Its great value is for pasture, and it should be kept eaten rather close for this purpose. The root is perennial, and it should be sown thickly, to prevent the irregular tussocks where thinly covering the ground. It endures drouth, and no grass is equal to this for growing in the shade, whence its use in orchards, and its name. It is thought to produce more pasture per acre than any other known grass. The seed are light and chaffy, and two bushels are required for an acre, if sown alone. It deserves more attention as a pasture grass than it generally receives.

(To be Continued.)

Mr. W. C. Noble has been appointed Deputy Registrar for the County of Middlesex.

The Deputy-Sheriff of Haldimand is about to resign. It is to be expected the Government will keep the office dangling before a dozen applicants until after the elections when eleven of them will be disappointed.

THE LADIES' CORNER.

HINTS ABOUT HOUSE CLEANING.

In a general house cleaning, carpets that do not require to be taken up should be loosened at the edges, and the dust removed therefrom, and a good lookout made for moths. If there are any traces of moths wash the floor with benzine or sp. of turpentine, and put the carpet down quickly, and the insects will get their quietus.

Straw matting should be washed with a cloth dampened in salt water. Take care to wet it but little, for if matting is soaked through it is liable to become brittle and soon give out. If Indian meal is sprinkled over it, or damp sand, and then thoroughly swept off, it will operate with good effect.

In washing windows, a narrow-bladed wooden knife, sharply pointed, is the best thing with which to take out the dust that harbours in the corners of the sash. Dry whitening will polish the glass nicely, and a weak black tea, with some alcohol is the best liquid with which to *wash* the glass. For a few days before the cleansing takes place, save all the tea grounds; then when needed, boil them in a tin pail with two quarts of water, and use the liquid on the windows. It takes off all the dust and fly specks. If applied with a newspaper, and rubbed off with another paper, they look far better than if cloth is used.

If there are old feather beds in the house, and no machine renovator at hand, put them out in the first heavy, drenching rain that falls. Let them become thoroughly wet and then turn the bed several times; then dry them in the sun, and when one side is perfectly dry, beat it with sticks to lighten up the feathers, and turn up the other side to dry; either placing boards under it or putting the beds on the piazza roof, if one is at hand.

To take out stains from either mattresses or feather beds, make a paste of soft soap and starch, and spread over the spots; when dry, scrape off with a knife, washing it with a damp sponge, as it falls off; if not clean, put on another paste. This application, if repeated frequently, until all discolourations are gone, will purify any bedding. Cockroaches can be kept away with powered borax. Keep it in a tin pepper box and sprinkle it wherever they go. Paris green is recommended, but is a poison, while the borax is harmless. Srigs of wintergreen, or ground ivy, will drive away small red ants, and branches of wormwood will make black ants "vamose the ranch."

Scald your bedsteads in the hottest soapsuds you can apply; if there are traces of bugs apply kerosene with a small paint brush. It is a sure cure. Tenants of city houses are often annoyed by bugs, and can not tell whence they came. Perhaps the border of the wall-paper might divulge their source, or the cornices of the windows disclose their haunts. Again apply kerosene and they will no longer trouble you. Carbolic acid may be applied. If pure, the odor is not as disagreeable as that of coal oil.

Papering and painting are best done in cold weather, especially the latter, for the wood absorbs the oil or paint much more than in warm weather, while in cold weather it hardens on the outside, making a coat, which will protect the wood instead of soaking into it.

In papering walls, be sure to remove all the old paper and paste, and scrape them perfectly smooth. The best paste is made of rye flour, with two ounces of glue dissolved in each quart of paste; half an ounce of powdered borax will make the paste better. People now generally understand how dangerous it is to paper a wall over old paper and paste. Many deaths have arisen from this cause; the air of many sleeping-rooms has been thus poisoned.

In whitewashing, a pound of glue dissolved in hot water and diluted with four gallons of cold water, to which is added six pounds of whiting, will be found to answer a better purpose than common lime. Wood-work can be washed with this glue size, and one coat of paint on it would last for years. A little chrome yellow will give a light lemon-coloured tint to the wash.

A cheap paint for the floor can be made, which a strong, smart woman could apply to any floor: five pounds of French ochre; one-fourth of