

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

Coloured covers/
Couverture de couleur

Coloured pages/
Pages de couleur

Covers damaged/
Couverture endommagée

Pages damaged/
Pages endommagées

Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée

Pages restored and/or laminated/
Pages restaurées et/ou pelliculées

Cover title missing/
Le titre de couverture manque

Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées

Coloured maps/
Cartes géographiques en couleur

Pages detached/
Pages détachées

Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)

Showthrough/
Transparence

Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur

Quality of print varies/
Qualité inégale de l'impression

Bound with other material/
Relié avec d'autres documents

Continuous pagination/
Pagination continue

Tight binding may cause shadows or distortion along interior margin/
La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure

Includes index(es)/
Comprend un (des) index

Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/
Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

Title on header taken from:/
Le titre de l'en-tête provient:

Title page of issue/
Page de titre de la livraison

Caption of issue/
Titre de départ de la livraison

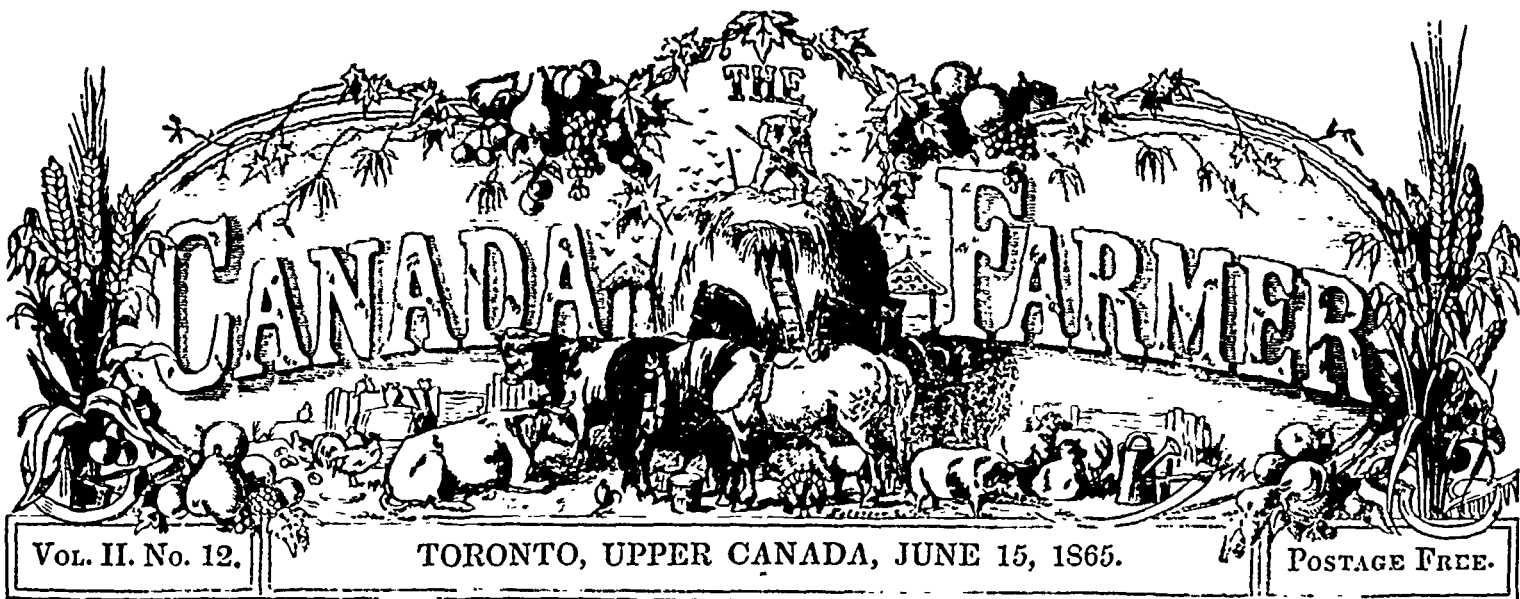
Masthead/
Générique (périodiques) de la livraison

Additional comments:
Commentaires supplémentaires:

Wrinkled pages may film slightly out of focus.

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	14X	18X	22X	26X	30X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12X	16X	20X	24X	28X	32X



VOL. II. No. 12.

TORONTO, UPPER CANADA, JUNE 15, 1865.

POSTAGE FREE.

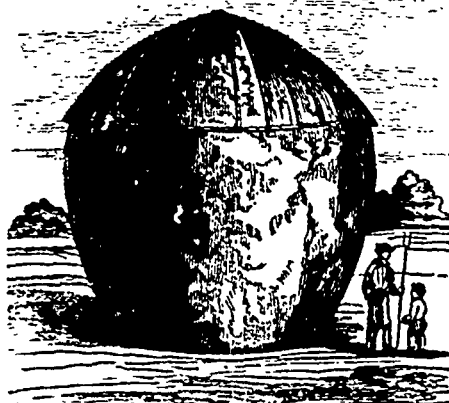
The Field.

Hay Curing and Stacking.

EVERY agriculturist should endeavour to provide for his live stock an abundant supply of good hay; indeed, no one can have any great pretensions to farming ability who does not make this a prominent item in his yearly calculations. Of course the amount of the supply will depend on the extent of land devoted to grass-growing purposes: while the quality will, in a great measure, be contingent on timely and judicious management. In almost every manual pursuit, the incorrect method of going about it is more readily fallen into than the right one; while, at the same time, the latter is invariably the easier and more profitable course in the long run. This remark is particularly applicable to the management of the hay harvest. Hay curing is a science, and requires, for its successful accomplishment, some well-timed and skilful manipulation.

Generally speaking, hay, with us, is not cut sufficiently early, and hence, a large proportion of the natural juices of the crop (the sugar and the starch), is allowed to escape, and in its place, the dry, innutritious fibre of the matured stalk is all that remains. When this is the case, the fodder is unpalatable to cattle, and its more important feeding elements are

lost. Grass should be cut when it begins to blossom, as it then contains the fullest development of nutritive qualities. It is well to mow it when there is no dew upon it, and it should be spread out at once. The best practice is to gather it into cocks every



night, and spread it out each morning as soon as the dew is off, until it is perfectly dry and ready to secure. The cocks should be small at first, and increase in size each evening, till it is in a condition to be stored. This is the shortest and easiest method of haymaking, as practiced among advanced English

agriculturists; and by its adoption all the nutritive and aromatic qualities of the hay are conserved. In the modern system of conducting haymaking, an immense amount of labour and time are saved by the use of the mowing and tedding machines, and the horse-rake; but as they are expensive, the adoption of all of these can be safely warranted only on our larger farms.

When hay is sufficiently dry, it should be removed from the field to winter quarters without delay. Most farmers have barns or sheds specially for the purpose of storing it; while others secure it in stacks. Better farming would produce larger crops of hay, so that the yield would be, in most cases, beyond the storage capacity of the buildings. Hay would, we believe, be oftener stacked, if our farmers understood the proper way of building ricks or stacks. As often made, they are tumble-down, rickety affairs, and so imperfectly roofed as to expose the hay to the weather. Hence many sell off their hay in the summer time, when it is a drug in the market, and thus avoid the risk of its being spoiled. Now there is really no difficulty in making secure hay-ricks. Only a few simple rules, and a moderate amount of care and attention are required to be observed; and by the aid of a few hints, and the accompanying illustrations, we trust to be able to show those of our readers, who may require to store a part of their hay-crop out of doors, how to build a stack in a workmanlike manner



One of our illustrations represents the proper form in which to construct a round stack; while the other shows two of an oblong form—one perfectly completed, and the other in process of construction. The site selected should be perfectly dry; or, if it must be in some spot liable to become damp, a trench, of ten or twelve inches in depth, ought to be dug round it. In such circumstances, however, a hay stand constructed of wood, and raised on pillars, a little above the ground, ought to be provided. Presuming that a dry situation is procurable, the bottom of the stack may be formed, of the required shape and extent, with an outline of stones or wood, as convenient. Its whole surface should then be covered to the depth of twelve inches with branches and straw, rails, or some other material which will prevent all contact with the ground, and thus provide against the tendency of the hay to gather moisture. The width, or diameter, as the case may be, should not exceed fifteen feet, in order that the air may better penetrate, and thereby obviate the liability of the stack to heat, from the effect of the saccharine fermentation which is always generated, and continued for a short time, in a newly built hay-stack. In oblong stacks it is better to construct the site of considerable length, for no harm accrues although the stack in any year does not occupy its entire length. The building process, when neatness of finish and regular form are aspired to, requires to be conducted with care and steadiness. In large English farms, the post of stacker invariably belongs to the most skilful workman, and the results are generally models of finish and symmetry.

The stacker should have, at least, one assistant to receive the hay from the team and hand it to the position required. The building should be commenced at the middle of the site and gradually extended to the outside, taking care to spread each successive layer regularly and uniformly over its entire surface. The waggon should be drawn as close as possible, not to interfere with the construction of the side adjacent, and the person forking the hay from it should be instructed to throw each forkful as nearly to the middle of the stack, where the assistant stands, as practicable. Unless this precaution is observed, the spot where each forkful falls will be more compressed than in other places, and when the stack subsides the shape will be irregular and contorted. The assistant should stand steadily and firmly when receiving the load from the waggon, and hand each forkful to the most convenient place to be reached by the stacker, who makes each deposition with a shaking action, in order to tear all lumps asunder, and render the whole texture uniform and open. The middle of the stack should be kept well filled and somewhat higher than the sides, and, after each load has been received, the stacker and his assistant should walk slowly and regularly over its entire surface, without approaching too closely to the outside edge. This precaution insures the hay being of uniform density, and prevents it from slipping. The outside stalk should also be carefully pulled, till its surface presents the appearance of a clothes-brush. After the body has attained fourteen feet in height, the heading is commenced by gradually narrowing the breadth on each side of the eaves or ridging. The stack is then topped out, and a few ropes are thrown over the ridging and fastened, to prevent the wind blowing it off. The stack is then allowed about two weeks to subside, which it will do to the extent of some two feet. It ought then to receive a few additional layers on the top, from the pullings or dressings of the sides, till it shall have been completely shaped, when it should be well thatched and thoroughly secured by ropes. The process just described will apply to either oblong or round stacks; and our illustrations exhibit the perfect appearance of a stack of each kind. A height of twelve feet is sufficient for the body after subsidence; and a rectangular stack of this height, forty feet in length and fifteen feet in width, will contain about fourteen tons of hay.

If the season is unfavourable, and the hay at all damp, a little salt sprinkled between each successive layer in building is an excellent remedy against mouldiness. The quantity used, must, of course, depend on the state of the hay; but as this is somewhat a difficult point to determine, perhaps a quarter of a bushel to the ton is a sufficient allowance.

A description of the process of thatching would transcend the limits of this article. We will, therefore, merely remark that the entire top of the stack, down to the eaves, should be well covered by drawn or straightened straw, and the ropes arranged in the manner shown in our illustration.

Thoughts on Ploughs and Ploughing.

There are some subjects on which people agree to disagree, and we strongly suspect that ploughing is one of them. Ploughs are furnished to the farmer in endless variety, both of price and pattern. One firm alone, in England, Messrs. Ransome & Sims, of Ipswich, specify in their printed and illustrated catalogue of agricultural implements, no less than twenty-five different varieties—long and short mould-boards, wide and narrow, heavy and light—but all made of iron and steel; and seemingly intended to last for generations. So great is the demand on this firm, and so confident are the public of being able to obtain from them what they require, that they supply orders to all parts of the world. Any person purchasing one of their articles may have any broken portion replaced, by merely sending a communication containing certain specified numbers and letters to the firm; and the result is, a shipment of the required portion, which is so arranged, that it can be applied to the original implement by any artisan or person of ordinary mechanical knowledge, using the tools which are supplied with the original implement. The firm in question employ in their works about 2,000 workmen, and turn out every implement required on a farm, from a simple iron harrow, costing £3 or £4, to the complicated steam plough and engines, with all their extensive furnishings, costing about £800 sterling. Now, it must be clear to any one, that varied as are soils and circumstances, there must be an immense deal of fancy and fashion in these different kinds of ploughs. If the object were merely to disintegrate the soil to a certain depth, and reduce it from a close mass to a soft and spongy agglomeration of particles, any one of these many kinds of ploughs, if followed by proper drags, harrows, or cultivators, would answer the purpose. But this is certainly not the case. One farmer finds, or thinks he finds, the best result, from merely turning over the soil in long slender strips, like ribbons, lying edgewise, one against, and partly overlapping, the other. Another turns the soil completely over in one solid furrow, nearly reversing the upper six inches of ground, and then reducing the surface, so newly turned up, to a comparatively fine powder, by the action of the harrow. Again, in fallowing, where ploughing is repeated as often as time or opportunity allows, until the whole of the surface is reduced to a light friable tilth, the end is attained by a different implement. And the most extraordinary fact is, that each farmer generally thinks that the plough he uses is better than that of any other person engaged in the same occupation, and toiling for the same end.

In the face of these various means of manipulating the ground, we have one solid, undeniable fact staring us in the face, which will not, and cannot, be denied,—namely, that the gardener, who expects and obtains, a greater return for his labour and from his ground, than the farmer does from his, uses only one implement—the spade, and works his ground uniformly in the same manner, by dividing the soil into small pieces, which he turns bottom upwards, burying what was previously the surface, and reducing the soil, at one operation, into the best possible seed bed for the future crop. It is true that gardeners sometimes use the plough, but it is as a substitute for

the spade—the latter is universally preferred where time and opportunity will afford it. There is no doubt the fertility of the soil, in a great measure, depends on a constant addition of manurial elements. We yearly subtract from it large yields of some or other kind of produce. If the elements of this produce are not returned to the soil, a gradual deterioration is very soon perceptible; but those manurial elements are comparatively useless unless well mixed with the soil; and it is for this purpose that we find it so necessary to pulverize and disintegrate its substance by the plough and other implements. All soils consist, more or less, of clay. Now clay has a strong affinity for ammonia and nitrogen; and the chief value of manures consists in these substances. We add large quantities in the actual manure applied, but the soil, also, when well stirred and exposed to the influence of the atmosphere, helps itself to these substances, and it is to this fact, quite as much as to the help of manure, that ploughing deeply, and often, assists so materially in the attainment of fertility.

The roots of plants extend only to certain distances, and they abstract so much from the soil whilst they are nourishing the plants. Roots naturally tend downward. It is therefore of the greatest importance to mix and pulverize the soil, so that every portion of it, which was aerated and ameliorated by last year's exposure to the air, be placed just so far beneath the surface, as to be within convenient reach of the roots of the plant, with which the ground is to be occupied. It is for this reason that the benefits arise from spreading manure on the surface, and then turning it under by the plough. But here another question arises. Moisture, as well as roots, naturally descends. Some of the most valuable portions of manure are soluble, and these, by the natural descent of the water are washed, not into the loose friable ploughed tilth, where the roots can readily find it, but into the cold unkindly till or subsoil, at the bottom of the ordinary furrow, which is so hard that the roots cannot readily penetrate and search for it. To meet this difficulty the subsoil plough is used, which following the ordinary plough in the same furrow, breaks up, and, in a measure, disintegrates the lower bed, into which the best part of the manure (i.e. the soluble parts of it) are washed. Here again, however, another question presents itself. At the time we sow the seed, we sow it on the top of the ground, and bury it with the harrow. It must not be buried too deep, or its growth is delayed. And it is all important that so soon as the plant begins to grow, it should be able to reach its food. In the first stage of its growth it requires ammonia or the soluble portion of the manure, but the greatest quantity of that element is at the depth of six or seven inches amongst the soil, at the bottom of the furrow, and it will be some weeks before the plant can reach it with its root. In Canada, where time and quick growth are of prime importance, a week lost in the early attainment of vigour by the plant may be fatal. Especially is this the case with fall wheat, for a week lost in the fall may cause sufficient delay at harvest to throw it into the rusting season, and the whole crop may be lost. We therefore require (in order to give the greatest possible benefit to the early plant) to mix the manure with the body of the soil, so that the seed may at once find it out when sown, and receive its benefit at the time when it is most essential to its growth. This end is, in a measure, attained by soaking the seed grain in some artificial, or chemical, mixture, in a concentrated shape, which not only assists its rapid germination, but promotes the speedy growth of the root, and affords an immediate magazine of nourishment when it is most wanted. The same end is attained by mixing the manure thoroughly throughout the soil, but this requires at least three ploughings,—since the first turns it under, the second lays it up again, and the third mixes it throughout the tilth. The following plan is equally good or better, since it not only does with two ploughings, but as the surface exposed to the action of the atmos-

phere is much greater, the benefits derived from the absorption of ammonia from the air, are considerably increased. The manure is spread on the soil. You then turn a furrow over on the part manured—proceed to the end, miss two furrows breadth, and, coming back, turn a furrow the opposite way, over against that which you just threw over, on the unploughed land. On coming again to the end, turn about (the horse walking in the same furrow which you have turned) throw the soil up over the manure and unplough 1 land, then miss two furrow breadths, and turn the third over on the part missed. By this means your field is all in ridges; and, if well done, is thrown up very high and rough. All the weeds you require to kill are turned, and all the manure is also buried in the centre of the ridge—where it remains till you require again to plough. Meantime the rain and natural moisture of the soil, take the soluble portions of the manure, not into the *subsoil*, but into the *clith*, or surface soil; and the natural decay of the ploughed-in weeds also benefits that portion of the land.

On ploughing again you open the ridge, throw one half one way, and the other half the other, into the vacant spaces, and you again reduce the soil to a flat surface, with all the manure thoroughly mixed through it, and that portion of the earth which has been benefitted by the atmosphere, is placed just where the plant can get the benefit of it. We may call this *triple ploughing*, but it is, in fact, only ploughing once. You miss half the ground the first time, and this is just the portion you plough the second time. A team will do two acres of this ridging up with as little labour as ploughing one in the ordinary manner; so that the time spent in the labour of the men and horses, is only equal to once ploughing.

Another point is worthy of consideration, and that is, the possible cause of rust. We know very little on this subject, and can only hazard conjecture; but it is generally believed that rust is caused by an overflow of sap or natural juices, which comes at a time when the grain is in such a state that it cannot absorb and take it up as fast as it rises. The stem of the wheat is softened by the moist weather in which it occurs. The flow is great, and as there is in nature no down-flow of sap to the soil, the pores burst, the rust is formed, and the crop ruined. Now may not this be caused thus,—at all events in manured lands? By ploughing the manure under, we have placed the chief magazine of nutriment far down into the earth—the wheat plant has been drawing upon this store, more or less, all the first part of the season but the dry heats of summer—while they have helped further to decay the manure, and render it fit for the sustenance of plant life and growth, have left these elements in so dry a state that they cannot be assimilated readily, and now when rain comes at a critical time in the growth of the crop, the moisture reaches the magazine of food—the roots find it in too great abundance for the state of the plant, a plethora of sap results, and rust is the consequence. Now if, on the other hand, the manure had been so situated that its chief benefit had been given out in the earlier stages of growth, the plant would have been firmer and stronger. The tillering out would have been more extensive, and there would have been more stems to take up the supply of plant food, at the time it came in the greatest abundance. This is speculative only, but is well worth thought.

Another speculation here arises. Have not all plants of the cereals two sets of roots, as in the case of Indian corn, one of which sets nourishes the stem, and leaves, and the other nourishes the grain? We do not say that they have, but who can say that they have not? We know that this is the case with Indian corn. The first, or fibrous roots, nourish the leaves and stem, and, in fact, produce them. As soon as the leaves and stem are complete, the second series of roots are produced, and immediately the ears start into existence. Any one can convince himself on this head

by pulling up plants of Indian corn at the different stages of growth mentioned and examining the roots. Many other plants possess these two sets of roots,—one for the one purpose, and the other for the other. Who shall say that all our cereals have not the same peculiarity? We know that all plants of the same genus are nourished more or less in the same manner. The mode in the species may be different, but the method of growth is the same. It is a subject of deep interest, and we hope to be able to follow it out on a future occasion.

Management of Red Clover for Seed.

WHEN the chief object is to raise a crop of seed, whether the clover is grazed or mowed off, it ought always be done in the month of June, in our latitude, and previous to the full bloom. It is not practicable to raise a good burden of hay and a crop of seed on the same ground in one season; nor can one expect a full yield of seed if the clover be grazed too long. If the large, or late kind of red clover, be allowed to stand until it is in full bloom, before it is cut, there will be only a small crop of seed. The most successful way of managing this kind of red clover is, to pasture it until about the 15th or 20th of June; in New England or New York, never later than the 20th of the month. It has been our practice to feed it down close just before shutting the animals off altogether, and if there was more clover than they could graze off close to the ground in a few days, the remainder was mowed, and usually left where it grew. The object in mowing off all the stalks that the stock leave, is to have all the clover start the second time as evenly as possible, grow uniformly, and all plants come to maturity at the same time, which is very essential. The seed or the portions of the field where the first growth has not been cut off, will come to maturity several weeks before the greater part of the crop is fit to cut. Consequently, most of it will shell off and be lost before the remainder can be secured. Many farmers, in their first attempts to raise the seed of the large kind of red clover, obtain only a small crop, simply because the first growth was allowed to advance too far.

In growing a crop of seed of the early, or small kind of red clover, the usual practice is to make hay of the first growth, though it is sometimes grazed off. Those who raise the largest crops of seed, cut the first time before it is in full bloom. They find this essential, and aim to cut when about two-thirds of the heads are in blossom. The stalks and leaves will be very green at this stage; but every day it is allowed to stand after this, tends to diminish the quantity of seed of the succeeding crop. Consequently when a farmer thinks best to allow the first crop of clover to come nearer maturity, for the purpose of having a greater burden of hay, he must remember that he will lose more in the yield of seed than he will gain in the quality and quantity of hay afforded by the first growth of the clover. If there be any weeds among clover, they should all be cut close to the ground, so that the clover will get the start of them and effectually suppress their growth.—*American Agriculturist.*

Cultivation of Buckwheat.

WHEN buckwheat is sowed in the spring, or first part of summer, the hot weather which occurs when it is in blossom, prevents perfect fructification. Consequently there will be numerous clusters of kernels that will be blasted. For this reason the seed should be sowed, so that the hottest weather will have passed, by the time the buckwheat is in full bloom. Cool weather or at least cool nights are quite as essential to a good crop of buckwheat, as hot days and nights are for Indian corn. The point to be aimed at in every locality is, to defer sowing as long as possible and allow it sufficient time to mature before an early frost will destroy the crop. This period occurs at different times in different localities. In the latitude of Central and Western New York, the proper time for seeding is about the first of July. We have known buckwheat sowed as late as the 16th of July, which produced a bountiful crop; but in that latitude there is a great risk on account of the frost, if it is not sowed by the tenth of July. Our most successful farmers in this latitude, calculate to have their buckwheat put in as soon as the fourth of July; and in some seasons, even when sowed at that time, frost appears so early in the fall as to almost destroy the entire crop. In some localities it may be sowed the latter part of July, and escape frost. If the soil where it is sowed be well pulverized so that it will vegetate immediately, and if the grain is put in by the fourth of July or even by the tenth, a bountiful crop may be expected. When the ground is ploughed but once for a crop of buckwheat where the soil is heavy, it is often so dry and hard, and breaks up in such large lumps and clods, that many farmers in waiting for rain to moisten the soil previous to

ploughing, are compelled to defer seeding until it is too late. But if the soil be ploughed in the spring, it will not become dry and hard by the time it is to be ploughed the second time, but will be moist and mellow; and the grain will vegetate soon.

Every intelligent farmer, who is located on a heavy soil, that is apt to plough up lumpy, understands the importance of ploughing it when it is just moist enough to turn up mellow. Buckwheat cannot be expected to vegetate in time, and flourish luxuriantly, and yield a remunerating crop when the soil is a mass of dry lumps.—*American Agriculturist.*

SHRINKAGE OF HAY.—The loss upon hay weighed July 20th, when cured enough to be put in the barn, and again February 20th, has been ascertained to be 27½ per cent. So that hay at \$15 a ton in the field is equal to \$20 and upward when weighed from the mow in winter.

GRAIN-BINDER.—Suel Foster of Muscatine, Iowa, writes to the *Country Gentleman*:

"I intimated some time ago that some Yankee east-west would bring out a successful Grain-Binder. It is a matter of so much interest agriculturally, that you a few weeks ago intimated some impatience. I am impatient, but not discouraged. Mr. John Underwood is yet busy, and has got the binder so that it is a complete success. It ties the bundle tight, and makes the knot fast and hard as you would tie it by hand, with one twine, if it will hold the sheaf sufficiently; if not, two are used, placing them four or six inches apart, with the same ease and operation that one is put around; the cost of twine is added, and in case of two bands, lighter twine may be used. This binder will require a rake specially adapted to it, and this is one cause of some delay. But the whole machinery is nearly completed, and when in operation will save nearly every straw the reaper cuts, tie it handsomely in sheaves, and thus drop them upon the ground. We expect to be able to save the grain so clean of waste in the harvest field, that this saving will pay the cost of twine. It runs with the running gears of the reaper, and with very little additional power."

UNDERDRAINING.—J. M. Connor, of Hopkinton, N. H., urges the necessity of drainage, which most theoretically acknowledge, yet but little is done. Much of the best soil, he truly says, is almost worthless because undrained. He is practising what he preaches, though he presumes 9-10ths of the farmers pronounce it a foolish expenditure from the apparent absence of springs; yet in digging down 2 or 3 feet, and in going 10 rods, water enough gathers to fill an inch pipe. Though the philosophy of underdrainage is admitted, few practice it. There is something curious in farmers about carrying theory into practice. "Why is it," he asks, "in respect to many branches of farming, men will not practice what they know? As an illustration: You may reason with many farmers about the mode of tending stock in winter, and although your views may exactly coincide with theirs, yet their practice you will often find is exactly the opposite: of the one his cattle look thrifty: the other's cattle look haggard and are half starved. So of tending swine: one man makes double the pork from a given amount of corn that another does; yet if you hear the two men talk, you would take the latter to be the best pork raiser. This is apparent in all the relations of life, men do not and will not practise what they know."—*Boston Cultivator.*

PASTURES.—Much has been said about top-dressing pastures. We confess to but little confidence in the application of manures above ground to improve pastures sufficient to meet the expense.—*Maine Farmer.*

At the winter meeting of the Massachusetts Board of Ag., in Greenfield, when the reclaiming of old pastures was under discussion, Wright, of Deerfield, stated that he bought an old pasture (14 acres) which kept but two cows: being of the opinion that it could be improved, and satisfying myself by hiring it one season, he paid \$27 an acre for it; my neighbours, said he, joked me,—would not have paid half that. I put in 3 cows: pretty well stocked, said a neighbour: it being a good grass season, it carried them through. I began to improve it by removing all obnoxious vegetation, after which it looked very smooth: then took 20 bushels of ashes, ½ ton of plaster, 8 bu. of hen-manure, and composted them, and in 3 weeks spread it broadcast over the pasture and it had a wonderful effect. Began it seven years ago, and summer before last put in 7 cows and 3 early calves and had a fine pasture; I put in the same last summer, but owing to the drouth, took out two; in 3 years I think I shall be able to keep 10 cows on that pasture.

Here is one interesting fact of the advantages of top dressing pastures. Others of a similar kind can be given. Let farmers take courage.—*Boston Cultivator.*

The Breeder and Grazier.

The Cross-Breeding of Horses.

THE lately issued number of the *Journal of the Royal Agricultural Society of England* contains an important article, by Mr. W. A. Spooner, on cross-breeding horses,—some of the suggestive points of which we offer to our readers, in a condensed form.

In opening his subject Mr. Spooner defines the principal features of his theory, and the laws on which he concludes it is based, as follows:—"Amongst the points I seek to establish are the following:—That the influence of the male or female parent is not capricious, but yet not always alike: in the majority of instances the male parent governs the size and external shape of the offspring (particularly in the back and hind quarters), whilst the female influences the constitution, the nervous system, and often the head and fore quarters—the case being, however, occasionally reversed. That this combination, which may be more of a mechanical than a chemical union, by no means implies such an equal division of influence as the mingling of two fluids, in which case the offspring would be unlike either parent, but a golden mean between the two, and there could be no handing down of type from one generation to another. It is rather such a fusion of two bodies into one that both defects and high qualifications are passed on from parent to offspring with a sort of regular irregularity, resembling the waves of the sea—each parent having the remarkable power of propagating ancestral peculiarities, though latent in itself. Thus it is that strong characteristics are handed from one generation to another; so that, if we seek by careful selection to remove a defect or propagate a good quality, we may calculate that a large number, perhaps the majority, of the offspring will meet our wishes, and by weeding out the remainder, and pursuing this course for several generations, we may accomplish our design. This view will further explain how it is that defects, not seen in the first cross, being kept down, as it were, by the superior influence of the improving parent, reappear in the next generation, and serve to deter timid breeders from continuing the experiment, or arm the opponents of crossing with strong but fallacious arguments against going beyond the first cross. Many persons who go thus far are deterred from going any further by the very numerous failures which result from pairing together animals of the first cross, and consider that pure breeds only should be perpetuated. However, crossing may be carried much further, even to the extent of establishing altogether a new breed, possessing qualifications which, although derived from them, yet neither of the present breeds alone exhibited. I now propose to inquire whether this system, which is so successful with sheep, is one altogether to be condemned with horses; always assuming that cross-breeding, to be successful, must be undertaken with a distinct and defined object, and assigning the highest praise and the first rank to those who maintain intact the purity of our best established breeds."

Mr. Spooner then proceeds to consider what are regarded as pure breeds, and mentions the racer or "thorough-bred," and the heavy cart horse, as perfectly opposite types. He is of opinion that long before either of these existing extremes were known, a medium type, now nearly extinct, obtained, of which the obsolete pack horse may be cited as an illustration. After a cursory reference to the varieties most nearly allied to this old type, the peculiarities of the race-horse, in an anatomical point of view, are glanced at; and his constitutional characteristics contrasted with those of the cart-horse. The racing term "stoutness" is defined to mean endurance connected with speed; and the extraordinary proportions attained by some thorough-bred animals are attributed to a persevering aim on the part of the breeders to produce size. The Derby winners and their competitors, frequently display a wonderful extent of girth when they are devoted to stud purposes; and yet, notwithstanding the size reached, there is not, it appears, another breed of horses so liable to propagate weeds as the English blood-horse, about 70 per cent., of whose offspring, it is said, prove inferior to both sire and dam. The reason of this extensive degeneracy is attributed to the fact that "although our first-class are large and powerful animals, yet they are descended from ancestors considerably smaller than themselves, and nature makes a constant effort to return to the

original type." Hence, when even the largest and most vigorous racing stallions are procurable, it is not necessarily safe to depend on them for the transmission of their own personal qualities.

Mr. Spooner, however, deprecates the idea that the importance of "blood" should be undervalued in the hack and the harness horse; but he is of opinion that "we should rely mainly on the sire for its introduction, and then only for the first cross." He continues:—

"Let us consider how the system works on some of our best mares. A farmer has a valuable mare that has been tested by many an arduous run. She is by a thorough-bred horse out of a half-bred mare, and valuable as she is, she is a shade too light. He is induced to put her to a thorough-bred horse, and the progeny is, of course, seven-eighths thorough-bred, but, according to my experience, mostly an unprofitable weed."

After some observations on good stamina, and its opposite quality—want of endurance—the writer continues:—

"Next to the very first-class race-horses—the twenty prizes amongst a thousand blanks—there is no kind of horse of which this country has such reason to be proud as the half-bred, three-parts, and seven-eighths-bred hunter, the highest combination in nature of strength and speed. Deriving speed and courage from their eastern progenitors, bone and substance from their northern ancestors, and action in all their paces from the blending of the two races, they are nearly perfect, and decidedly most generally useful."

We now come to the pith of the treatise, and that is the suggestion to fix, by persistent intermixture of the cross-breeds, results already obtained. In our author's words:—

"When a breed of sheep or bullocks has reached this point, we seek to perpetuate their excellencies by parents who on both sides possess them, avoiding, of course, too great consanguinity. We do not resort, as a rule, again and again to the original breeds from whence the improvement has been built up. Why, then, should horses be an exception to this rule? Why, although the mares of this stamp are considered well adapted for breeding, are the males condemned to be castrated, as unfit for that purpose? By such practices we not only lose the services of the males in transmitting their good qualities, but deprive one-half the mares of the opportunity of breeding animals as strong and valuable as themselves. The practice is, no doubt, in many respects a matter of convenience; for weight-carrying hunters are more tractable, and always, as geldings, command good prices; whilst it is hard to compete with the constant supply of ready-made stallions—good, bad and indifferent—from racing stables, so long as their friends and owners can persuade breeders of horses and agricultural authorities that the goodliness of the fore legs is of little account, or that a bad thorough-bred stallion is better than a good half-bred."

Many remarkable cases are cited to prove the correctness of the writer's views and the truth of his theory; and on an examination of the facts of the case, the following conclusions are drawn:—

"(a) That the use of the thorough-bred horse or mare has greatly improved the coarser-bred in speed and in bottom. That the blood has amalgamated exceedingly well with other breeds, and that the good results of even one cross only, has been seen in various degrees and for several generations.

"(b) That the effect of crossing with the thorough-bred is to increase the supremacy of the nervous and muscular systems, and is more particularly shown in the fuller development of the thighs and hind-quarters, and the elongation of the muscles generally. But that with these advantages the bones, joints, ligaments, and sinews are smaller and less powerful, and the action, although quickened, is rendered lower and less safe. The ability for jumping and for carrying heavy weights without injury to the joints and sinews is greatly diminished. The skin is also rendered thinner and more liable to abrasion, the carcass smaller, and there is a diminished capability for putting on flesh.

"(c) That so long as suitable mares with sufficient substance can be procured, the breeder of hunters should, on the rare occasions when they offered, avail himself of the services of a first-class thorough-bred stallion, or even one of the second class, provided he has hunting qualifications—good substance, or good high action in the trot or walk.

"(d) If, going a step further in the same direction, the breeder seeks to put the female progeny to the blood-horse, he will most frequently fail, the offspring becoming too light; whilst if he had availed himself of the half-bred or three-parts-bred stallion (the

grandson of a great race-horse), his stock, having the same amount of breeding as the dam, would have afforded him a fair chance of realizing a high price, and failing this, a comparative certainty of a fair price for the cavalry, or for the general market.

"(e.) Having duly recognised the claims of the rough-bred horses of the first and second class, we can only advise with regard to the third and inferior classes, that their services be altogether dispensed with, their place being taken by three-fourths, or half-bred stallions, possessing bone, substance, and good hunting qualifications. And it is such animals as these that deserve encouragement from our great agricultural societies."

Old horses should be driven by old people. Till you have had the rheumatics yourself, you cannot properly sympathise with the spavins of others.

WHY DO CATTLE GNAW OLD BONES?—"H. H.," Westchester Co., N. Y., asks: "What is the cause of cattle wanting to be chewing pieces of old bones, as is the case with mine? I give them salt, but they refuse it, and if they can find an old bone they will chew it all day if I would let them. Can you tell the cause? You have sold corn, hay, milk, and young cattle, cows, etc., off your place, until the bone material, phosphate of lime, is so nearly exhausted that the animals have got the 'bone disease.' Feed them a little bone meal daily, for some time, and sow bone dust on your pastures, and mowing land. It will greatly increase your crops besides. This advice is good for thousands besides you.—*American Agriculturist*."

CURIOUS EFFECT OF INNOCULATION ON CATTLE.—As I accompanied the waggon a short distance from the house, I asked how so many of the oxen had lost their tails, and was told it was the lung sickness—a curious effect of the disease, I thought; but I was further informed that it was usual to inoculate healthy cattle by passing a needle and thread, previously steeped in the virus of the diseased lung, through the skin of their tails. This caused a painful swelling, which, if the needle touched the bone in its passage, extended to the whole hind-quarters, and occasioned the loss of the tail, or perhaps of the animal. I was told that of the cattle not inoculated 60 per cent. died, and that the operation reduced the percentage to 25. How it reached this country is not known.—*Explorations in South-west Africa, by T. Baines, F.R.G.S.*

GESTATION OF COWS.—Two neighbours have gone to law about the damage arising from a bull running at large, contrary to the laws of the State of Iowa. The animal ran with four cows of the plaintiff. One of them calved within 40 weeks, the others were expected to, at furthest, within 45 weeks. To decide the length of time a cow may go with calf, is of interest to all parties concerned. The period of gestation varies, more or less, in all animals. The average period in the cow is considered 40 weeks. The late Earl Spencer kept a record of 764 cows; they averaged between 284 and 285 days. Blane says he kept an account of 160 cases, which varied from 241 to 308 days. Tessier says he found it to vary from 230 to 331 days, in 570 cases. Bergen considers the average period 280 days. Youatt makes the average 270 (this is probably an error). Manvie records a case of a cow going 16 months; the calf died. There is a case recorded in 1831, in the Veterinary School of Utrecht, of a cow carrying her calf 15 months, less 2 days; the calf lived. The shortest period of gestation that we find recorded, where the calf lived, was 220 days. The authorities cited are reliable.—*American Agriculturist*.

HORSES AT PASTURE.—Every horse in the country ought, if possible, to have at least a few weeks run in the pasture. It will do for him what no kind of medicine or nursing can do as well. It will improve his hoofs, his hair and skin, his wind, digestion and blood, will take out stiffness and lameness, and put on flesh, and infuse new life generally.

Before turning horses out, it is well to accustom them gradually to that kind of food, by cutting a little grass for them each day, or allowing them to "bait" for an hour or so daily in the back-yard. And when let out, they should not have "flush" feed at first, as they will be likely to over-eat, and injure themselves both in their looks and their wind. The best grass for a horse pasture is a mixture of Timothy, Blue Grass, and Red Top. Horses relish this feed better when it is moderately short. When they are to be turned out for any length of time, and not to be used much in the meanwhile, they should have only a light pair of shoes. This will allow the hoofs to come in close contact with the soft earth, and will prevent contraction. Where horses cannot enjoy pasturage, they should have fresh cut grass as often as convenient, and should have their stall floors covered with tan bark, or better, have the blanks taken up and clay floors laid.—*Am. Ag*

Sheep Husbandry.

The Scotch Colley Sheep Dog.

He will bark at a faddled tyke,
As the fawn-shaunty dyke,
He'll nest, so he'll, fawn at free,
Ay get him fress in oka place,
His breast was white, his tounie black,
We could see at a glossy black,
His fawle tail, w' upward curl,
Hung o'er his hanches w' a swirl.

—BRUCE.

From time immemorial the Dog has been found the friend and companion of man. Among the various special objects for which he has been trained, none perhaps are more interesting or useful than the service which he renders the shepherd and drover in the management of flocks and herds. Different kinds of dogs, however, are employed for these purposes in different countries, varying in their physical and social characters. In A. I. regions they approach to the Mastiff type, where greater strength is required to enable them to encumber not only wolves and other powerful animals of prey, but also human enemies.

In the Pyrenees, Hungary, and parts of Germany, where wolves abound, breeds of Shepherd Dogs prevail that very much resemble those destructive animals in appearance, so much so, indeed, that it is sometimes no easy task to distinguish correctly between them. Before sheep husbandry became of so much importance as it now is in the mountainous parts of Scotland, the dogs employed in the tending of sheep had a close affinity to the Terrier; and naturalists are of opinion that the most approved shepherds' dogs of Northern Europe have been descended from the wolf. "If we shall place the older shepherd's dog, of the South of Scotland, termed a Colley beside a Esquimaux dog, we shall discover little difference between them in their essential characters, and still less between the Esquimaux dog and the shepherd's dog of Ireland. The dogs of

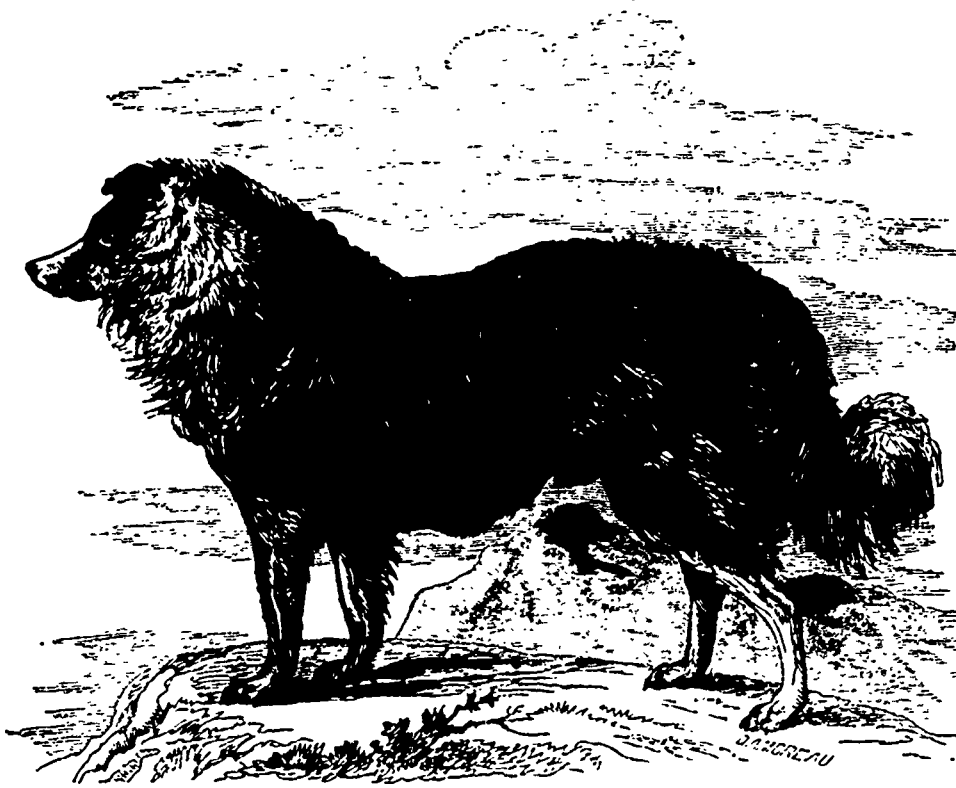
this class have a certain likeness to one another, which may be ascribed, independently of a common origin, to their being employed in the same pursuits, and treated nearly in the same manner. They are of small, or medium size, have the muzzle narrow, the ears sub-erect, the hair long and coarse, and the tail bushy. When these dogs are inured, from generation to generation, to the tending of flocks, they acquire the habits proper to this service; they become devoted, as it were, to the shepherd and his flock, and exhibit, in the discharge of their peculiar functions, a high degree of sagacity, patience, and fidelity.

"It is common for naturalists to exalt the shepherd's dog, with respect to his natural endowments, beyond all other races of dogs. But the shepherd's dog, though wonderfully sagacious in every thing that relates to his peculiar services, does not appear to merit, with respect to intelligence, the highest place among dogs. He is inferior to the barbet and its varieties in his aptitude to receive instruction; and in particular qualities, he falls short of others. Thus, in vigilance, he is not equal to the mastiff; in docility, he is inferior to the spaniel; and in courage he cannot be compared to the little terrier of the same countries. His habits vary with the education he receives. When his province is to supply the absence of enclosures, and protect the vineyards and cultiva-

ted crops, he becomes vigilant, keeping his eye upon the flock, so that they may not stray into the forbidden grounds, and gently turning them back when they pass their allotted limits. This is the peculiar duty of the shepherd's dog in most parts of France, which has given rise to those charming descriptions of the habits of this animal, which the poets and naturalists of the country have given us. It is interesting to observe these docile creatures watching their little flocks, obeying every sign of the shepherd, and slowly pacing round the little patches of pasture, on which the animals are confined. In countries, again, where the flocks are large, and suffered to spread over great tracts of ground, as in the mountainous parts of England and Scotland, the same delicacy of management is not necessary or practicable. The dogs, in this case, are taught to run swiftly to distant parts, to head the flock, to turn it to either hand, or bring it back to the shepherd. In the British Islands, the shepherd's dogs present considerable diversities of form and habits. Those of the Southern counties of downs are mostly a peculiar breed, with shaggy furs, pricked ears, and generally with short or rudimentary tails. They are generally less ten-

The sagacity and docility of the Colley, when well bred and trained, are sometimes truly wonderful. Though he has a fine and sharp muzzle, his scent is so delicate as to place him on an equality, in this respect, with most spaniels. By careful training his habit of observation, and the carrying out of the instructions of his master, seem to bring him within the domain of reason. We have a vivid and very pleasing recollection of an illustrative fact that occurred some years since, while making the ascent of Ben Lomond, in the Highlands of Scotland, accompanied by a shepherd. When we had got about a third of the way up the mountain, the shepherd directed his dog, a well bred and thorough trained animal, to collect a flock of black faced sheep, about three miles off, and bring them to a spot a little below, that we might on our descent take them to the homestead on the margin of the lake. The sagacious animal faithfully carried out his instructions, and had his flock on the spot two hours, at least, before we returned. The fact is shepherding among the mountains, without the assistance of these dogs, would be next to an impossibility. One dog, in many instances, is more serviceable than half a dozen men.

Mr. James Hogg, the Ettrick Shepherd, living in his early days among the sheep and their quadruped attendants, and an accurate observer of nature, as well as an exquisite poet, gives some anecdotes of the Colley (the Highland term for sheep-dog), with which the reader will not be displeased "My dog Sirrah," says he, in a letter to the editor of Blackwood's Edinburgh Magazine, "was, beyond all comparison, the best dog I ever saw. He had a somewhat surly and unsocial temper, disdaining all flattery, and refusing to be caressed; but his attention to my commands and interest will never again be equalled by any of the canine race. When I first saw him, a drover was leading him with a rope. He was both lean and hungry, and far from being a beautiful animal; for he was almost black, and had a grim face, striped



with dark brown. I thought I perceived a sort of sullen intelligence in his countenance, notwithstanding his dejected and forlorn appearance, and I bought him. He was scarcely a year old, and knew so little of herding that he had never turned a sheep in his life; but, as soon as he discovered that it was his duty to do so, and that it obliged me, I can never forget with what anxiety and eagerness he learned his different evolutions; and when I once made him understand a direction, he never forgot or mistook it."

On one night, a large flock of lambs that were under the Ettrick Shepherd's care, frightened by something, scampered away in three different directions across the hills, in spite of all that he could do to keep them together. "Sirrah," said the shepherd, "they're a' awa!"

It was too dark for the dog and his master to see each other at any considerable distance, but Sirrah understood him, and set off after the fugitives. The night passed on, and Hogg and his assistant traversed every neighbouring hill in anxious but fruitless search for the lambs; but he could hear nothing of them nor of the dog, and he was returning to his master with the doleful intelligence that he had lost all his lambs. "On our way home, however," says he, "we discovered a lot of lambs at the bottom of a deep ravine

der towards their charge than the dogs of the cultivated parts of France and Germany. In the countries of enclosures, the English sheep dogs are of every sort, and have rarely the characteristics distinctive of a true breed. In the mountainous parts of the North of England and South of Scotland, the dogs of this class have acquired a more uniform set of characters, and so have become a breed or race, the individuals resembling one another; and they excel all the others in the faculties and habits proper to their condition. They are termed Colleys, probably from the Celtic Coillean or Cuillean, signifying a little dog or whelp. This kind of dog is placed more in habitual communication with his master than most others. He inhabits the same cabin, and becomes, as it were, a member of the household. He contracts most of the simplicity of habits and manners distinctive of those with whom he associates. He is homely in his demeanour, indifferent to the caresses of strangers, whom he rather repulses than courts, and seemingly sedulous only in the discharge of his proper duties. He attaches himself to his immediate master; and frequently, when transferred to a stranger, pines, and yields an unwilling service. The race is frequently crossed with other breeds, but, for the most part, those are the most useful and trusty which retain the conformation of the older Colleys."—(Low.)

with dark brown. I thought I perceived a sort of sullen intelligence in his countenance, notwithstanding his dejected and forlorn appearance, and I bought him. He was scarcely a year old, and knew so little of herding that he had never turned a sheep in his life; but, as soon as he discovered that it was his duty to do so, and that it obliged me, I can never forget with what anxiety and eagerness he learned his different evolutions; and when I once made him understand a direction, he never forgot or mistook it."

On one night, a large flock of lambs that were under the Ettrick Shepherd's care, frightened by something, scampered away in three different directions across the hills, in spite of all that he could do to keep them together. "Sirrah," said the shepherd, "they're a' awa!"

It was too dark for the dog and his master to see each other at any considerable distance, but Sirrah understood him, and set off after the fugitives. The night passed on, and Hogg and his assistant traversed every neighbouring hill in anxious but fruitless search for the lambs; but he could hear nothing of them nor of the dog, and he was returning to his master with the doleful intelligence that he had lost all his lambs. "On our way home, however," says he, "we discovered a lot of lambs at the bottom of a deep ravine

called the Flesh Cleuch, and the indefatigable Sirrah standing in front of them, looking round for some relief, but still true to his charge. We concluded that it was one of the divisions which Sirrah had been unable to manage, until he came to that commanding situation. But what was our astonishment when we discovered that not one lamb of the flock was missing! How he had got all the divisions collected in the dark, is beyond my comprehension. The charge was left entirely to himself from midnight until the rising sun; and, if all the shepherds in the forest had been there to have assisted him, they could not have effected it with greater promptitude. All that I can say is, that I never felt so grateful to any creature under the sun as I did to my honest Sirrah that morning."

A shepherd, in one of his excursions over the Grampian Hills to collect his scattered flock, took with him (as a frequent practice, to initiate them in their future business) one of his children about four years old. After traversing his pastures for a while, attended by his dog, he was compelled to ascend a summit at some distance. As the ascent was too great for the child, he left him at the bottom, with strict injunctions not to move from the place. Scarcely however, had he gained the height, when one of the Scotch mists, of frequent occurrence, suddenly came on, and almost changed the day to night. He returned to seek his child, but was unable to find him, and concluded a long and fruitless search by coming back to his cottage. His poor dog, also, was missing in the general confusion. On the next morning by daylight he renewed his search, but again he came back without his child. He found, however, that during his absence his dog had been home, and, on receiving his allowance of food, instantly departed. For four successive days the shepherd continued his search with the same bad fortune, the dog as readily coming for his meal and departing. Struck by this singular circumstance, he determined to follow the dog, who departed as usual with his piece of cake. The animal led the way to a cataract at some distance from the spot where the child had been left. It was a rugged and almost perpendicular descent which the dog took, and he disappeared in a cave, the mouth of which was almost on a level with the torrent. The shepherd with difficulty followed; but, on entering the cavern, what were his emotions when he beheld the infant eating the cake which the dog had just brought to him, while the faithful animal stood by, eyeing his young charge with the utmost complacency. From the situation in which the child was found, it appeared that he had wandered to the brink of the precipice, and then either fallen or scrambled down, the torrent preventing his re-ascent. The dog, by means of his scent had traced him to the spot, and afterwards prevented him from starving by giving up a part, or perhaps, the whole of his daily allowance. He appears never to have quitted the child night or day, except for food, as he was seen running at full speed to and from the cottage.

Mr. Hogg says, and very truly, that a single shepherd and his dog will accomplish more in gathering a flock of sheep from a Highland farm than twenty shepherds could do without dogs; in fact, that without this docile animal, the pastoral life would be a mere blank. It would require more hands to manage a flock of sheep, gather them from the hills, force them into houses and folds, and drive them to markets, than the profits of the whole flock would be capable of maintaining. Well may the shepherd feel an interest in his dog; he it is, indeed, that earns the family bread, of which he is himself content with the smallest morsel; always grateful, and always ready to exert his utmost abilities in his master's interests. Neither hunger, fatigue, nor the worst treatment will drive him from his side, and he will follow him through every hardship without murmur or repining. If one of them is obliged to change masters, it is sometimes long before he will acknowledge the new owner, or condescend to work for him with the willingness that he did for his former lord; but, if he once acknowledges him, he continues attached to him until death.

The Dairy.

Management of Acids in Cheese-Making.

It may not be generally known to dairymen, and yet it should be, that when milk has been allowed to acquire sensible acidity, before treating with rennet for cheese-making, the whey should be drawn as soon as possible. Milk that is quite sour, can be made up into marketable cheese, by properly understanding the management of the acids. In such cases it will be well to draw off the whey as soon as it begins to form, and, by adding warm water and again drawing down, the curds may be worked so as to obtain good cheese.

Every cheese maker is aware of the character of cheese made from sour milk, where it is manufactured after the usual method. The cheese is hard, dry and poor, and if sold separately, would bring often no more than three or four cents per pound. One cheese of this character in a load of fifteen or twenty that are prime, will injure the sale of the whole, reducing the price at least a penny or more per pound. Now much of this cheese, if the milk is rightly managed, could be avoided. It is claimed, by those proficient in the "coarse curds process," that good cheese can be made from milk, a considerable portion of which, is so sour as to be lobbered. The art consists in drawing off the acids quickly, and if the curds have not the proper consistency, still further washing out the acids by addition of water. We have reference now to milk that is deemed by many as unsuitable for cheese-making, and which the old fashioned dairyman would throw away as too sour to be safely run up into a curd.

At this season of the year there is more or less trouble from sour milk, especially in private dairies, and we are convinced that but few persons understand how such milk should be properly managed.

The manufacture of prime cheese is a chemical process, rather than mechanical, and a certain degree of acidity in the milk and whey is necessary. The art in manufacturing consists in the management of the acids; to know how far they should be carried, and how checked. A great many cheese makers have no idea of what is required, but still persist in working after old methods, although aware that the product of their dairies is inferior to that of others who have adopted the new system. The use of sour whey in cheese manufacture was urged by us a number of years ago, and we claim to have been the first writer on the dairy who brought its advantages to the notice of the public. Since then the factory system has become established, and our improved method of cheese manufacture has been due to this principle, which requires an acid condition of the whey during the process of cheese-making, in order to produce the best results.

To manage this acid properly requires judgment, skill and experience, and herein lies the art of producing finely flavoured and high priced cheese. The "coarse curds process," owes its superiority entirely to this principle; and some of the manufacturers by this process have become so expert in the process, that their art resembles, in some respects, that of the chemist, so nicely are all the conditions and combinations adjusted. It is among those, so far as we have been able to learn, that the best American cheese has been made, at least in quantities that have been large and uniform. Many dairymen, of course, hit the mark now and then by accident, but unless principles are learned, and the skill acquired to indicate the quality of cheese from the vat of milk without guess work, the art of manufacture is not perfectly learned.

We may remark here, what has heretofore been urged by us, in treating upon this subject, that sour whey should always be provided by the manufacturer, and kept on hand, so that in case the milk has been made up when too sweet, the acid may be applied to correct the condition of the mass. By its judicious use in this way the curd will be improved. It is this condition of the milk, whey and curds, that distinguishes the improved Cheddar process. By it the Englishman has been enabled to make a richer and finer flavoured article than the bulk of that produced in American dairies. We must adopt the system in order to compete successfully with high priced English cheese. There is no reason why we should not be able to make an article equal to the best produced elsewhere. But, in order to do so, the old notion that throughout the whole process, great care be taken to prevent acidity, must be abandoned. We advise those who have never learned the new process to take some pains to acquire the necessary knowledge and skill in manipulating and treating the milk, whey, and curds, for they can rest assured it will pay.—X. A. WILLARD, in *Utica Herald*.

Ingersoll Cheese Factory.

To the Editor of THE CANADA FARMER:

SIR.—As I had the pleasure of visiting the Cheese Factory of Mr. HARRIS, Ingersoll, during the past month, a description of it may prove interesting to your readers. This gentleman is now an old dairyman, and he has recently erected one of the finest factories for cheese-making in the Province. The building is two stories in height, the upper story being a curing room, the ground floor serving the dual purpose of making and curing. This summer being the first season of the working of this factory, Mr. Harris has employed an experienced cheese-maker, Mr. F. H. Eldred, from Herkimer County, N. Y., in order that his cheese may find as ready a sale as those manufactured at the various factories of the State of New York. His work has already begun, and the milk of several hundred cows is daily being transformed into great round yellow table luxuries. Cheese buyers are as plentiful as flies in August, and already several offers have been refused from European shippers. Mr. Harris has been to considerable expense in fitting up his building. His vats and steamers cost him about eight hundred dollars. They were all manufactured in the City of Utica, and combine the very latest improvements. This is good evidence that Canada is marching on in the race of improvement. Each farmer, who brings milk to this factory, is provided with a large tin can, and upon arriving at the factory with his milk, men and cattle hoist and pour it into the large vats, weighing and recording the number of pounds, thus establishing his proportionate right in the coming profit. One man in the State of New York last season carried his milk from three cows to a factory just four months, and used what a family of three persons needed, and the amount of his profit was one hundred and eighty dollars. Another man carried the milk of three cows to the same factory during the season, netting two hundred and twenty dollars, and one animal was a two-year old heifer, besides using milk for a fair sized family.

What farm product pays better than the manufacture of cheese? How much better it would be for our Canadian agriculturists to produce milk and make it into cheese, and buy their wheat, than to attempt to raise that grain which, for the last four or five years, has been destroyed by the midge. I would recommend farmers to raise milk and buy wheat, thereby letting the midge starve out. Send your milk to a factory where you can have it manufactured for two cents per pound, thereby saving all expense and paraphernalia of manufacturing. The milk crop never fails. For a more full knowledge of this factory, please to call at Ingersoll, and either Mr. Harris or his cheese-maker, Mr. Eldred, will take pains to show you through the establishment. J. SIMMS.

Pure Butter.

THE fresh sweet pastures of June, furnishing that abundance of succulent feed which new milch cows need to give rich milk in abundance, make this month pre-eminently the butter month. We present herewith the views of a good butter maker, expressed in a communication to the *American Agriculturist* by one of the correspondents of that journal. "I am very particular about thoroughly scalding and sunning my pans in hot weather; do not fill them more than half full, and skim after the milk thickens sufficiently so that the cream will come off smooth without taking any milk with it, which, I think, is apt to make curdles in the butter, and that injures the looks of it. Churning should be done every day, if sufficient cream be obtained. If not, the cream in the pot should be thoroughly stirred whenever any is added, and I add a little salt, which certainly is not a bad idea. I design, when I churn, to have the cream the right temperature, neither too warm nor too cold, so as to avoid putting in any warm or cold water, and as soon as it is gathered I take it out and wash it in cold water, until it is thoroughly freed from buttermilk; salt it to my taste, and set it in a cool place until the next morning, when I work it over again until it presents a firm and uniform appearance. Last summer, I worked my butter three times before packing. At the last working I add a small quantity more of salt. After packing it smoothly I sprinkle a tablespoonful of loaf sugar and a little salt over the top between every layer, and apply on the top of that a cloth pressed down closely to keep the air from it during the time that must intervene before the packing of the next layer. After the jar or firkin is well filled, I put the cloth on the

top and apply another thicker one, and fill up with it packed tightly, and even with the top of the jar; then lay on another cloth to fit the top. I also put another one over the jar and have it come over the jar and paste it tight to the jar, then put on a board and weight. Or another way: Instead of putting in salt I take melted butter and turn it on the thin cloth over full, and lastly, apply salt sprinkled over the top before putting on the last cloth and weight. Then again, I have had butter keep well after packing thoroughly as I have stated, to fill up the top of the jar with strong brine, which should stand two inches deep on the top without being filled up with butter, and it is necessary to put a little salt in the brine. Any one, whether he has a very good place to keep butter or not, if he attend to the strict observance of these rules, can have good butter and keep it to maturity, and that through the hottest weather.

Abortion in Cows.

THE *Utter Herald*, in commenting on a statement that Prof. Agassiz thinks of instituting an investigation into this subject, speaks as follows of the continuance and spread of the malady:—

"It is about eight years since the habit first made its appearance in the herds of Herkimer, and every year it increases in its virulence, spreading among the best herds, and often completely breaking them up. During the winter just past the habit has made more extensive ravages than formerly, and seems to be spreading over the entire dairy districts. So far it seems to baffle all efforts looking towards means for prevention. It makes its appearance in the best and the poorest herds, and without regard to the manner in which they have been treated. It shows itself in all varieties of soil, on highlands and lowlands, among cattle reared on the farm where it occurs, and among those purchased and driven from a distance. We have repeatedly urged upon dairy-men the necessity of a thorough investigation into the causes of this disease—to join together and employ some scientific man to look over the various premises where the habit has appeared, and collect such facts in regard to it as would lead to a discovery of the causes. Of course there is a cause, which should have been discovered long since. The trouble has already become so serious that some have abandoned the dairy business, and, if it continues, many others must do so also: for where one-half or two-thirds of a herd is annually broken up, it is evident dairying cannot be carried on with profit. We shall look forward to the investigations of Prof. Agassiz on this matter with great interest. Probably no man in the country is so competent to examine into the true causes of the disease, or will so thoroughly investigate it in all its bearings. And if he be able to point out a remedy, an important service will be done to the dairy interests, and one which will be widely appreciated."

HOW TO PRESERVE MILK.—When milk "turns," this effect is caused by the development of an acid in the liquid. This chemical change may be effectually prevented by adding to the milk a small quantity of bi-carbonate of soda. This addition is by no means injurious to health; on the contrary, bi-carbonate of soda aids digestion. One of the great dairies of Paris employs no other method but this for preserving the milk it keeps on sale.—*Scottish Farmer.*

CHEESE FACTORIES IN VERMONT.—*Messrs. Editors*—In compliance with your request I send you the following statistics of the Cheese Factory in this place. The business, which is conducted by a Stock Company, was commenced in March, 1864, but did not get fairly under way till about May 1. The entire cost of fixtures exclusive of the building, which was rented for \$100 per annum, was \$1,225. The factory employs three hands—one man and two women. Manufactures milk from 350 cows. In the best of the season made nine cheeses per day, each weighing 100 lbs. when cured. Milk delivered morning and evening in tin cans on spring wagons. Cheese sold at from 22 to 25 cts. per lb., through the season at least 3 cts. per lb. above the best private dairies. It took 10 lbs. of milk to make 1 lb. cured cheese. Whole cost of cheese per lb., boxed and delivered at the depot, two cts. and one mill. Average gross earning per cow from \$30 to \$100. The quality of cheese was firm, solid, mild. Patrons well pleased and business enlarging. For generating steam, uses a four horse upright tubular boiler. Uses Cooper's vats and Gray's screw press. Used no ice, but instead has a copious flow of cold water conveyed in pipes from a spring not far distant. Some factories use ice to cool the milk in the vats, but sufficiently cold water is preferable. For the material facts in the above statements I am indebted to Allen Whedon, Esq., one of the principal proprietors.—*W. HOLMES, West Point, in the Vermont Record.*

Poultry Yard.

Small White Hands:—Poultry Rearing.

An "Englishwoman" sends us the following sensible communication, which we hope will not be thrown away on her fellow-countrywomen. We trust that she will meet with unqualified success in her hatching and rearing operations, and that, before long, she will have many imitators all over the land.

"I have often been surprised since I came to Canada to observe how little attention is paid to the rearing of poultry, and the cultivation of the garden. I think a great many young ladies in Canada have very mistaken ideas in reference to the duties of farmers' daughters. They seem to think that gardening and the care of poultry would spoil the look of their white hands; but do they know that the small white hand is the representative of luxurious idleness, and the large hand of earnest toil? And just as the small-handed warriors of old vanished before the sturdy and manly energy of the large-handed Teutons, will the beauty pass away before the truth of industry; and the labour of the large-handed will at once support and rule the world. Mr. Editor, don't you think farmers' daughters would be much more in place weeding their gardens and feeding their poultry than spending so much time on dress? If one-half of the time they occupy in adorning themselves, was spent in beautifying their gardens, how different Canada would look! I will give you my plan of rearing poultry. I have 15 hens and a rooster. Most of them are of the Brahma breed, and our chief object is to raise chickens for the table. The Brahmas are such good sitters they answer my purpose well. When the chickens are hatched, I shut them up for one or two weeks and feed them well on small wheat and shorts. As the hens are quiet, I can put several into the same place, and when they are let out I have a large coop ten or fifteen feet long by five in width, with bars far enough apart to allow the chickens to go in and out, but not the hens, into the coop. I put wheat, boiled potatoes and meal, and milk twice a day, and by harvest I have all the fat chickens I want. I feed the hens outside the coop. We have more than the French king wished on behalf of his subjects; for we have chickens at least three times a week all the summer. I raised more than one hundred last year. My first three hens this spring hatched 29. I put them with two hens and have six more sitting. I go on the plan of keeping a few hens and keeping them well, which I think is the best way. Every farmer's wife and daughter should do all in their power to add to the comfort of home and the beautifying of its surroundings.

"P.S. Since writing the above four more hens have hatched. My young ducks and chickens now number 64, and if the rats and hawks do not make a raid on my poultry yard, I hope to raise 150 this season."

Italian Mode of Fattening Ortolans.

Sir Hugh Lyon Playfair, in his lectures on the application of physiology to the rearing of cattle, gives a very remarkable illustration of the influence of rapid alternations of light and darkness, without reference to the diurnal revolutions of the earth, in inducing sleep and inclination for food, in the Italian mode of rapidly fattening ortolans. "At a certain hour in the morning the keeper of the birds places a lantern in the orifice of the wall, made for the special purpose of darkening and illuminating the room. The dim light thrown by the lantern on the floor of the apartment induces the ortolans to believe that the sun is about to rise, and they awake and greedily consume the food upon the floor. The lantern is withdrawn, and the succeeding darkness acting as an actual night, the ortolans fall asleep. During sleep, little of the food being expended in the production of force, most of it goes to the formation of flesh and fat. After the birds have been allowed to repose for one or two hours to carry on digestion and assimilation, the keeper again exhibits the lantern through the aperture. The mimic daylight awakes the birds again; again they rise and feed; again darkness ensues, and again they sleep. The representative sunshine is made to shed its rays four or five times every day, and as many nights follow its transitory beams. The ortolans thus treated become like balls of fat in a few days."

HEN HOUSE AND CHICKEN YARD.—At the weekly meeting of the American Institute Farmers' Club, May 9th, the chairman, Mr. Alderman Ely, called the attention of the Club to an experiment which he had tried in constructing his hen house with two distinct apartments, one for laying, and the other exclusively

for the setting hens. He found it answer admirably until the eggs commenced to hatch, when all the hens, attracted by the peeping of the chicks, and moved by their natural instincts, would leave their own nests and hover around the peeping family. The consequence of this natural curiosity on the part of late setting hens whose eggs had not yet commenced to hatch, was that the latter became cold, and the unhatched chickens died while the setters were trying to appropriate the fortunate hen's early brood. It was suggested that hens never do well in a large body, and that where many are kept, moveable steadings might be peculiarly employed. Prof. Mapes explained the construction of a good chicken yard. A board fence about five feet high, with several posts ten or twelve feet high, to which several horizontal wires, extending around the yard, are fastened. Hens will not creep from such a yard, for in attempting to fly out they will catch on the wires (which are of small size), and fall back into the yard. On wood they would readily effect a landing, but cannot sustain themselves on the wires, and will never try to fly between them without alighting. Such a chicken yard is an economical substitute for the expensive structure of wood, lattice, and boards.

The Apiary.

SUPERIORITY OF THE ITALIAN BEE.—Mr. Fairchild inquires in regard to the hardness of Italian bees, after relating some of his experience. I have kept them some five years, and have found them equal to my expectations; being more hardy than the black-les, die in winter—they gather one-third more honey, breed one-third more bees—working when so cold that black bees right along side would scarcely stir, and actually storing honey while the black were consuming the stores to live. This I have seen, by actual inspection of the interior of the hives, from day to day, each stock having equal chances, standing side by side the Italian bees proving so much superior to the black, that I do not now keep the black ones at all.

P.S.—I am told that the Italian bees are kept in log-hives in their native clime.—*Cor. Co. Gent.*

CURING BEES' STINGS.—We remember many years ago in reading the travels of James Backhouse, in South Africa, this distinguished English botanist stated, that when stung by a venomous insect, he sucked out the poison with his mouth, and observed the taste to be distinctly acid. Acting on the suggestion here furnished, we have found the best remedies to be alkalies, for the purpose of neutralizing the acid. Saleratus or soda should be made into a thin paste and applied to the punctured spot, which should be kept moistened with it some time. In the absence of either of these substances, fresh wood ashes made into a paste answers well. It is important that a speedy application should be made, before the poison has extended far. The application of mud has been found useful, acting in two ways, viz., by excluding the air and diluting or weakening the poison by the moisture in contact with it, but alkalies are much more efficient. As the season for the stinging of bees is approaching, those who are sensitive to the action of the poison may do well to bear this remedy in mind.—*Country Gentleman.*

LIGURIANIZING AN APIARY.—In a late number of the *Field* you wish to know for the benefit of your readers, the mode by which I insured the bees rearing queens from the Ligurian brood put into the hives, instead of from the old black brood. I devoted two strong stocks to the raising of royal cells from the Ligurian combs with which they were supplied, and when the royal cells had been sealed up about four days, I cut them out of the combs, and having removed the common black queen out of a stock, and the royal cells that I found on the combs, placed the Ligurian royal cell in the centre of the middle comb, and in about two days after, I had the pleasure of seeing a beautiful Ligurian princess in the hive, which compensated me for the great trouble I had bestowed upon them. In nearly every stock I knew the exact hour in which the princess was hatched. I examined the stocks again in ten days after I had removed the old queen, and in some of them I cut out no less than ten royal cells the bees had constructed on the common combs. I saw nearly all the young queens come out on their matrimonial excursions, and some of them were out on four separate days before they had been successful in meeting with the Ligurian drones, my apiary being very short of them at that time. I made memoranda each day of every particular relating to each stock, which are very interesting, but too long for publication in your paper.—*WM. CARU, in London Field.*



DISEASED EGG-PASSAGE IN A HEN.—An "Enquirer," of Toronto, seeks for information on the following case:—"I have got a young hen that has a protruding of the egg-passage. Is there any remedy for it? I rub it with sperm ointment and put it back, but it will come out again in a short time. She did lay a few eggs, but has now ceased."

WINTER BARLEY PROSPECTS.—"Wm. Roseburgh," writes from Branchton, County of Waterloo, as follows:—"Winter barley has been successfully raised in this vicinity for three or four years. It is now just coming out in head, looks well, and, judging from its present appearance, a productive crop may be anticipated. I think this fall I will be able to supply any of your correspondents with seed, who may be inclined to commence the cultivation of winter barley."

SPECIAL HERD-BOOK FOR CANADA.—"A Subscriber" wishes to know "if there is any one special Herd-Book, adopted and patronized by the Agricultural authorities of Canada? If so—its name and probable cost."

ANS.—No; but the Board of Agriculture of Upper Canada intend to publish a Herd-Book some time during the present summer. The price will be four dollars.

THE CANADIAN NATIVE BEE.—In reply to a communication on this subject, which appeared in our issue of May 1st, J. H. Thomas writes:—" 'Bee-keeper' strongly recommends his neighbours to be satisfied with the Canadian native bee as the honey they make is delicious and abundant in quantity.' As to 'making honey,' neither the Italian nor the 'native bee' can do that, for bees gather honey and do not make it. If 'Bee-keeper' will try the 'Italians,' he will find that the quantity of delicious honey will be far more abundant."

THREE DOLLARS NOT ENOUGH.—"J. H. Thomas and Bros.," of Brooklin, write as follows: "As several of the readers of THE FARMER have sent us three dollars for a hive, understanding, from the wording of the article, on 'The Profits of Bee Keeping,' in THE FARMER, for May 15th, that we furnish hives to all parties for that price; we wish to say to the public that such is a mistake. We only furnish hives for \$3 to such parties as have purchased of us a hive and right. Therefore all persons ordering hives, if they have never purchased a hive and right of us, must send \$5 for a single boarded, or \$7 for a double boarded, which will include the right to make and use."

A FENCE THAT WILL WITHSTAND SPRING FRESHETS.—"A Subscriber," of Chatham, sends us the following:—"In building the fence sink the posts three feet deep, and within about six inches of the bottom of the post insert a cross-piece 2 inches square, and 2½ feet long. Then nail the boards firmly on the posts, and you have a fence that will defy the violence of any ordinary freshet. Three years ago I built a fence on some bottom lands near the River Thames, and on the lower part of the ground I put cross-pieces through all the posts. This spring we were visited with a freshet of more than ordinary magnitude, which destroyed nearly all that part of my fence which was built without the cross-pieces, but failed to injure the portion on which they were, although the water was two feet above the top of the fence."

A "BEE-MOTH PREVENTIVE."—J. H. Thomas, of Brooklin, C. W., writes as follows:—"In THE CANADA FARMER, for May 1, 'George Nettle, Senr., of Fort Erie,' enquires if there would be such a general demand for a 'Bee-moth Preventive,' as to guarantee his embarking in the trouble and expense of obtaining a patent, and what would be the expense of it? If your correspondent does his drawing and makes out the necessary papers himself, the Patent Office fee will cost \$20. If he employs a Patent Office Agent his charge must be added to the above, which would probably be about \$10 more. Should he succeed, he may rest assured that an independence would be secured to himself and his succeeding generations. But I fail to see how a 'Bee-moth Preventive,' can be so constructed as to prevent the bees carrying in the eggs of the moth on their legs! There can be no 'Bee-moth Preventive.' Will Mr. Nettle correspond with the writer?"

"HOLLOW HORN AND TAIL-ILL IN COWS.—Two correspondents, one writing from Scarborough, and the other from Wilmington, Del., U. S., send us communications on the subject of "Diseased Cows," which appeared in our correspondence of May 1st. The latter writes, by deputy, to the effect, that "the disease is undoubtedly 'Hollow Horn,' caused by a worm which gets in, or forms a short distance from the end of the tail, and goes up the backbone to the horn." The former says "it is neither more nor less than tail-ill." Both correspondents agree in recommending that "the cow's tail be cut open, and the wound filled with salt."

ANS.—We fear both our correspondents are disposed to be over-credulous. There is no such specific tail or horn disease, as has been described, known to veterinary science; while the supposition that "the worm" burrows its way from the end of the tail to the horn is utterly unfounded,—a real "cock-and-bull story." As we stated in answer to the enquiry in No. 10, the symptoms generally arise from poor and insufficient nourishment, and an absence of that kindly care and watchful supervision, which all dumb animals ought to receive, at the hands of their owners.

INTEREST CHARGED BY LOAN COMPANIES.—"J. S." of Hamilton, writes as follows on a subject of great practical interest, and concerning which many of our farmers "could a tale unfold:" "Your correspondent 'A. H.' of McNab hardly goes far enough on this subject. He disapproves of taking over 10 per cent. while professing to lend at 6½; but take the case of a loan of \$1,000 for six years, the re-payments to be made yearly. First, in order to get this, the first half year's payments must be deducted from the amount advanced, viz.: \$116.40, leaving \$883.60 to be received by the borrower, while his mortgage secures \$1,000. His yearly re-payments are to be \$232.80, by which the Society gets the first year, interest at \$8.16 per cent., the second \$9.97 per cent., the third \$12.82 per cent., the fourth \$17.95 per cent., the fifth \$29.94 per cent., and the sixth \$45.32 per cent. Equalizing this rate for the six years, it averages within a fraction of 12 per cent. per annum. Nor is this the whole of the evil, for of every annual payment thus made, one twelfth is in each case paid one month before it is due. Again, they profess to allow a liberal discount if the mortgage is redeemed before it becomes due. But the liberality in practice only amounts to allowing 6 per cent. simple interest for the balance of the term, against the high rate previously charged. The difference of 4 per cent. goes into the profits of the Society, while they can immediately lend this very money out again, and thus secure a double profit."

The Canada Farmer.

TORONTO, UPPER CANADA, JUNE 15, 1865.

The Season.

WE continue to hear from nearly all parts of the country the most cheering accounts of the appearance of the crops. As far as human foresight can predict, there are the most encouraging tokens of an abundant harvest. It is many years since farmers were gladdened with such good fall wheat prospects; and the approaching harvest is already anticipated as an instalment of the "good time coming," so long wished for. The late seasonable and refreshing showers have conferred incalculable benefits on vegetation; and our cereals attest their appreciation of the timely nourishment by the erect position they at once assumed, and the renewed vigour of growth that they have since put forth. The parching sun, for some days previously, made rain anxiously looked for, and some misgivings were entertained that a repetition of last year's drouth was about to be experienced. These gloomy forebodings have now given place to bright hopes and lively gratitude; and the prospects of good crops were seldom, if ever, brighter in our land.

Fall and spring wheat, oats and barley, are all giving an excellent account of themselves. The hay crop promises an abundant yield of fine quality; and the pastures are clothed with a luxuriant mantle of grass, which must gladden the heart of the dairyman.

We are glad to learn from our correspondents, that in some districts a large breadth of turnips is being sown. The experience of last winter will not have been too dearly bought, if it effectually teaches the urgent necessity of providing a plentiful supply of those valuable roots for winter fodder.

Fruit prospects are generally good; although in some sections a little damage has been done to the plum crop, by frost. In many parts of the country, the foliage of the currant and gooseberry trees is being completely swept away by caterpillars. Many infallible remedies—brimstone and quicklime among others,—have been suggested, tried, and proved ineffectual. Horticulturists, like doctors, are liable to differ, and in this case, while the larvæ pursue their work of devastation, the remedy is left for the discovery of the "coming man."

A few correspondents have cordially responded to our appeal for communications on the state of the weather and crop prospects, in their neighbourhood. We tender them our best thanks, and, while we ask for a continuance of their favours, we trust their number will be considerably augmented.

Plant-food in the Air.

CHEMICAL experiments prove what observation and reflection might almost suggest, viz., that the atmosphere is a vast storehouse of food for plants. The influence of the air on soils has often been remarkably evinced. Clay soil exposed to its action undergoes a process of decomposition. The mineral substances which it contains become soluble, and are rendered assimilable by plants. The surface of the soil is made porous and powdery, and what was a stiff clay is changed to fine friable earth. But beside thus acting on the soil, and producing this twofold effect of liberating the stores of food already in the ground, and improving the mechanical condition of the soil, the atmosphere directly supplies plant nutriment. Carbonic acid is the chief source whence growing plants get their carbon. There is only a small proportion of this in the air,—four parts in every 10,000,—and at the first blush, this would seem but a very meagre source of supply. But when we consider the enormous volume of the atmosphere, and the perfection of the apparatus with which plants are furnished for the purpose of absorbing the carbonic acid diffused around them and everywhere wafted toward their leaves, we need not wonder that it is found to be sufficient. The air in the soil itself contains vastly more carbonic acid than the atmosphere which rests upon it. M. Boussingault found that the air in sandy soil recently manured, contained 217 parts of carbonic acid in every 10,000 parts. Shortly after rain, the air from the same soil was found, on analysis, to contain 974 parts of carbonic acid. This fact explains the wonderfully rapid growth of some crops after a copious rain. The quick starting of turnips on well-manured land, just after a shower arises from the sudden and ample supply of carbonic acid which is furnished. The atmosphere consists chiefly of two gases, oxygen constituting about 21 parts, and nitrogen 79. Mixed with these are carbonic acid, ammonia, and nitric acid, in certain small proportions. Water is also present in the form of vapour. Minute proportions of phosphoric acid have also recently been detected in the atmosphere by a French chemist. There is abundant proof that it is chiefly the carbonic acid of the atmosphere which nourishes vegetation. It is calculated, indeed, that at least three-fourths of the dry substance of plants is derived from this source. The minute vessels and tissues of plants form so many factories and distilleries in which starch, gum, sugar, and other substances found in all vegetable productions, are prepared so as to subserve the purposes of plant life.

This curious provision of nature explains many of the phenomena which we behold. It has much to do with the efficacy of fallowing. Rotation of crops is based to a considerable extent upon it. The broad-

leaved plants which absorb largely from the air, are most important and useful members of such rotation. We see also how the fertility of uncultivated places and old woods is maintained. Soils which naturally fertilizes keep producing, and still retain their strength. The long-continued experiments of Mr. Lawe, at Rothamstead, show that an average of about sixteen bushels of wheat per acre can be raised year after year on the same ground, without manure, the soil being thoroughly cultivated and often stirred, thereby admitting the air. But for this provision of nature, land that is neither manured nor tilled in any proper sense would become incapable of bearing a weed. We thus understand the meaning of the axiom, that "tillage is manure." It lets the fertilizing material of the atmosphere gain access to the soil, and so keeps up its productivity.

The great practical lesson thus taught may be expressed in three words *sun, air, and soil*. Let plough, harrow, scuffle, cultivator, spade, fork, rake, hand hoe, be in constant requisition. If the air is to circulate freely in the soil, it must have ready admission to it. A hard, caked surface shuts out the food supply. Hence all through the growing season, there should be repeated loosenings of the ground. Even when clear of weeds, the land should be stirred up and kept in a porous condition, that the air may get into it and feed the growing plant.

We also perceive the impolicy of over-thick seeding and planting. A stunted growth must result from this, because the air cannot freely circulate among the growing plants, and supply the needed nutriment.

The Wheat Crop and its Insect Enemies.

Thus far our great staple would seem to have had immunity from insect depredators. Our last issue contained an extract from a local paper, in which "The advent of the Grub" was announced, and we learn from some farmers in the vicinity of this city, that the midge shows itself at evening, attracted by the light of the lamp, but we hear of no serious damage being done thus far. The chief danger, however, is yet in the future. We would urge upon our readers the exercise of a vigilant observation of the doings of these pests of the farm,—a careful investigation of their habits,—and a record of any circumstances which may give a clue to escape from their ravages. We had intended giving some illustrations and descriptive details in regard to the midge, chinch bug, anilides, &c., but find that they must be reserved for our next number.

Dwellings of Agricultural Labourers in England.

THE report of the government officers on the cottages occupied by farm labourers in England contains some startling disclosures, and is, as the *Patriot* remarks, "a heavy indictment against the country squires and landowners." Dr. A. J. Hunter has personally visited villages in every county, and carefully inspected over 5,000 cottages. His account of them is most deplorable. Many of them are utterly dilapidated. Nearly all contain insufficient accommodation for a single family; yet such is the scarcity of dwellings and the high rate of rental, that two or three families herd together, or lodgers are taken in. In 2,195 of the cottages inspected, there was but one bedroom, though they were inhabited by 1,913 adults, and 3,906 children—an average of . . . adults, and 2 children to every bedroom. To say nothing of comfort, which is out of the question, the results to mortality are fearful in the extreme. There is nothing surprising in the statement made by Mr. J. Percival, that 11 out of every 100 children born in Westmoreland and Cumberland are illegitimate, and that "modesty dies out among the population." Out of miserable houses "whose thatch lets in the rain, and whose windows cannot keep out the wind," the

labourers, Dr. Hunter states, have to "start in the dark and return in the dark, to obtain the privilege of doing a hard day's work for a shilling!" Such a state of things loudly demands legislative interference, and cannot too soon be remedied. No wonder a population thus treated is anxious to emigrate. "If," says an English paper, "the idea once gets into our agricultural districts, as it has into Ireland, that there is a paradise beyond the Atlantic where every honest labouring man can easily get a good home and three full meals a day, there will be an exodus from this country which will leave the landlords to discover that it might have been economical as well as righteous to spend a little more upon house-room for the farm hands."

The Malt Tax in Britain.

For some time past, considerable pressure has been brought to bear on the Chancellor of the Exchequer for a reduction or repeal of the duty on malt. In the recent Budget this tax is left untouched, and in the course of his speech, on the occasion of laying his Budget before Parliament, Mr. Gladstone gave some curious facts about beer drinking in Britain. It appears that forty millions of pounds sterling are spent annually, by Englishmen, for beer, and the consumption steadily increases. To lessen the price of beer by one farthing a quart, it would be necessary to reduce the malt tax one half, and thus lose £3,360,000 of revenue in the year. If indirect taxation is to be resorted to at all, beer is surely a legitimate object of it,—much more so than tea and sugar. With the tax on beer only 20 per cent, and that on tea 10 per cent, the Chancellor had no hesitation in deciding to leave the beer as it was, and lighten the duty on tea. In 1861, the consumption of beer in Britain was 20,003,000 barrels,—just a barrel a head,—the population being about 20,030,000. Taking into account the criminal, pauper, sick, and wealthy classes,—also the teetotallers, now a considerable body in Britain,—there is no little point in the questions put by Mr. Gladstone when defending his line of policy: "Has the Englishman changed his nature? Has he ceased to supply himself with a sufficiently liberal proportion of this truly excellent and national drink?" The Chancellor's argument on the malt tax was a most able and exhaustive one, and is considered to have perfectly concluded and settled the controversy on the subject.

A Great Want Supplied.

MANY persons in various parts of Canada have, to our knowledge, been desirous of engaging in bee-keeping, but have been deterred from doing so for want of a cheap hand-book of practical directions on the subject, adapted to this country. We have much pleasure in stating that such persons can now obtain the desired information in a small compass, and at an exceedingly low figure. A work entitled "*The Canadian Bee-Keepers' Guide*" has just been published, which is, in our view, the very thing. Its author is Mr. J. H. Thomas, of Brooklin, one of the most skillful and experienced bee-keepers in Canada. The work in question, though, of course, it commends the Thomas hive, is far from being a mere hive advertisement. It contains information of great value to all who keep bees or meditate doing so. We have carefully read the work in the advanced sheets, and have no hesitation in giving it the most unqualified commendation. It is practical, straightforward, plain and comprehensive. We think Mr. Thomas has run some risk in going to the expense and trouble of getting up this work, and we only hope he may be somewhat repaid by the number of copies ordered. Having ourselves urged Mr. Thomas to undertake the task he has fulfilled so well, we feel a degree of interest and even responsibility in the matter, and trust it will be found we have not misjudged the existing need for such a publication. *The Canadian Bee-Keepers' Guide* will be furnished at *twenty-five cents* each, per single copy; five for one dollar; and twelve for two dollars. Orders may be sent, post-paid, to J. H. Thomas, Brooklin. If the books ordered are to be sent by mail, 3 cents additional must be remitted to cover postage on a single copy, 15 cents for five, and 36 cents for one dozen. No doubt the work will shortly be on sale at the bookstores in the various towns and cities throughout Canada.

The Wool Trade.

Wool has been in brisk demand and at high figures. It has averaged somewhere in the neighbourhood of forty cents per pound. Anxiety to secure the highest market price has hurried the processes of washing and shearing, so that these jobs have been got through with earlier than usual the present season. A good deal of wool has come into market in poor condition, but buyers have paid but little attention to quality, and have paid alike for bad and good. When this article settles down into its old steady habits, as it must do ere long, discrimination will have to be exercised, and a premium put upon choiceness of quality and carefulness of manipulation. No doubt "wool is wool" in a sense,—so also it may be said that "wheat is wheat,"—but our bread staple varies in excellence, and is paid for accordingly. So also must it be with wool, and we therefore advise our readers to improve their flocks, and learn to put up wool in prime order.

It will be seen from a report in another column that the sheep and shearing committee which met in Hamilton on the 27th ult., passed a resolution to the effect that Canadian wool ought to bring 60 cents per lb. We are inclined to think that the reasoning on which this opinion is based is somewhat speculative. A discussion of the subject in the *New York Economist* winds up with the firmly-expressed opinion that when the temporary inflation subsides, wool will settle down at 70 cents per lb. United States currency for fair, good condition Ohio wool. The *Economist* observes:—

"Canada combing will continue above the figure mentioned, for there is very little of this class of wool raised in the United States, and the amount of worsted machinery which has been put in operation during the war has created quite a demand for this kind, which will be increased rather than diminished. The Pacific Mills are about commencing the production of Colburz and other worsted fabrics, such as have been imported from Bradford, England; and the United States must either be supplied with combing wools from Canada or England, which is worth in the latter country from 18 to 51 cents per lb. in gold. To obtain them from there would cost over 90 cents in currency."

No doubt our farmers would get somewhat better prices by selling to the wool-dealers direct, and therefore the recommendation of the Committee to bring in wool on a set day is a good one. The best profit made in the wool trade has undoubtedly been that of the merchant who has come between the farmer and wool-dealer.

Australian Wool Show.

A GREAT show of Merino wool was held at Melbourne on the 12th of January last. The exhibitors numbered twenty-eight. Of these nine were in the first-class, which offered prizes for the best and second best bales of sixty ewes' fleeces of washed wool; eight were in the second class, in which similar prizes were offered for bales with the same number of fleeces in grease; and eleven in the third class, which provided a prize for the bale containing not less than 200 lbs. of washed fleeco wool of the highest value per lb. The wool exhibited in the first-class ranged in value from 1s. 8½d. to 2s. 1d. per lb.; that in the second class from 9½d. to 1s. 1½d.; and that in the third from 1s. 9d. to 2s. 3½d. per lb. Some of the best fleeces were sent to be shown at the Dublin International Exhibition with the collection of Victoria products. The following observations of the judges may be useful as an example of brief yet comprehensive reporting. The numbers given are those of the entries, not those of the award:—

Class I.—Lot 1.—In good condition, very skirly, should have been shorn a little earlier. 3. Heavy in condition, more skirly than Lot 1; well grown; a few tender fleeces. 4. Heavy in condition, skirly, well stapled. 5. Not in good condition; ordinary breed. 6. Superior combing and quality, fair condition; very desirable wool. 7. Very light in condition; good combing, not first-rate quality. 8. Best condi-

tin, first-class coming; suitable for the present market. 9. Splendid combing, very desirable wool; heavy skirts. 10. Very superior in condition; thin and tender in the staple and skirts. In this class we noticed several of the lots deteriorated in value by the presence of tar brands.

Class II.—Lot 1.—Very heavy; well stapled. 2. Heavier than Lot 1, better length, and well grown. 3. Short; ordinary breed; a little lighter. 4. Well-bred combing; very heavy. 5. Well-bred; heavier than last lot. 6. Superior quality; good combing. 7. Well-bred; lightest lot of greasy. 8. Very well bred; very heavy. We consider the condition of the greasy wools very inferior.

Class III.—Lot 1.—Very superior in breed, quality, length and condition. 2. Well grown, good combing, a little heavy in condition. 3. Superior combing and quality; fair condition. 4. An inferior wool, badly skirted; fair condition; clothing. 5. Good combing; well grown; good condition and quality. 6. Badly got up; fair medium wool. 7. Beautiful wool in condition and quality. 8. Ditto. 9. In light condition; mostly clothing. 10. Very light in condition; soft, silky wool; combing. 11. In magnificent condition; has very good quality. 12. Very light in condition; not particularly well grown.

A Monthly Cattle Fair has been established at Harriston, township of Minto. The first fair will take place on Friday, 27th October.

The New York Tribune says that Canada ranks next to Illinois in the number of cattle forwarded to that market.

The sum of \$100 has been placed at the disposal of the Berlin Town Council, to be expended by it in forwarding the establishment of a monthly fair in that town.

FARMING IN LOWER CANADA.—We have pleasure in laying before our readers the first of a series of articles on this subject from the practised pen of an able and experienced writer, who, after a residence of some years in Upper Canada, has recently taken up his abode in the Lower Province, and is devoting himself mainly to agricultural pursuits. We are sure the communication from "Agricola" will be read with much interest, and we take leave to say that it embodies just the sort of information we should like to get from every part of Canada, both East and West.

Agricultural Intelligence.

[FOR THE CANADA FARMER.]

Notes from Lower Canada.

FRANKLIN, C. L., June 1, 1865.

Do the farmers of Upper Canada ever bestow a thought on how it fares with their agricultural brethren in Lower Canada? If they do, I daresay many of them wonder how an agricultural population can manage to subsist here at all, laboring under so many disadvantages as they do in comparison with the agriculturists of Upper Canada. They are themselves in possession of a soil declared to be, for ordinary agricultural purposes, unsurpassed by any in the world, they work it with the most improved implements, and they have the most favourable conditions of climate for bringing to maturity all the products of the Temperate Zone; and yet, with all their advantages but few of them find farming a very money-making occupation. On the contrary a large proportion of them are constantly complaining of hard times, and find it exceedingly difficult, with all their labour and pains-taking, to keep their heads above water. And with the ideas they have of Lower Canada as made up of a soil either naturally sterile, or worn out and exhausted by poor farming, frost-bound for almost half the year, and then parched by the fierce heat of the short summer months, it must be a puzzle to not a few of the western readers of THE FARMER, how those who are dependent upon the soil in this eastern section, can derive from it anything like a decent living, if indeed they succeed in escaping actual starvation.

Yet it is the fact that the farmers of Lower Canada, as a class, are not so very badly off. If they work under more unfavorable conditions, and display less enterprise than the western agriculturists, they somehow or other manage matters in such a way that on the whole they keep better out of debt, and perhaps accumulate money more generally than the more highly favoured farmers of Upper Canada. I am told that in the French districts, it is the rule rather than the exception for a *habitant*, who has been ordinarily industrious and frugal, not only to be out of debt, but to have a nice accumulation somewhere of bank bills or gold pieces, to give his children a start in the world, or to be a provision for himself against his old age. The same statement applies, so far as I can judge from my own observation, to the condition of the farmers, as a class, in the English-speaking portions of Lower Canada. It is true at least of this part of the country in which I have come recently to reside. You might go five miles along the road on which I am living and not see a farm that was mortgaged, with two or three exceptions, due to peculiar circumstances. Could the same be said of any five miles of road through a settled country anywhere in Upper Canada? The statement of this fact may modify somewhat the feelings, partly of pity, partly of contempt, which the majority of Upper Canadians associate with the idea of farming in the eastern section of the Province.

WHEAT.

This every one knows, is grown here on a much more limited scale than in Upper Canada. In the year preceding the last census, while nearly twenty-five millions of bushels of fall and spring wheat were produced in Upper Canada, Lower Canada raised less than three millions of bushels. It would be a great mistake, however, to take these figures as a fair indication of the relative agricultural productiveness of the two sections. It may be freely admitted that Upper Canada is the better adapted for growing wheat, but it is just possible that she grows too much of it in comparison with other crops, and that she may now be passing in some degree through the experience which has compelled Lower Canadians to cultivate at this day a far less breadth of wheat than they did formerly. For the sake of illustration, let us compare this County of Huntingdon in Lower Canada with the County of Peterborough, in Upper Canada, there being no very great disparity between the two as regards the total amount of acreage under cultivation. I find by the last census, that, as regards spring wheat, the yield per acre under that crop was actually greater in Huntingdon than in Peterborough—in both cases being a little under 14½ bushels per acre—but Huntingdon having to some slight extent the better average. The fall wheat in Peterborough brings up the average to 15½ bushels; but, as part of the returns for Huntingdon are in minots—a minot being one-ninth more than an Imperial bushel—and as arpents are given instead of Imperial acres—an arpent being one-seventh less than an acre—it may be fairly estimated that the yield of Spring wheat per acre in Huntingdon was fully equal to the yield of both spring and fall wheat per acre in Peterborough. But, when we look at the figures showing the breadth sown, we find an immense difference. In Huntingdon only one in every seventeen acres of cultivated land was under wheat, while in Peterborough one in every four and one-half acres was under that crop. I have no doubt that in Peterborough a larger proportion of the land is suitable for wheat growing than in Huntingdon, where the farmers in very many cases have to make the best they can out of a light, gravelly soil, which, until much persevering toil has been expended on it with the stone-boat, is covered almost out of sight with immense deposits of stone. If a greater breadth of wheat were sown, the average productiveness for the County might be diminished, and, perhaps, no very great credit for an unusual degree of practical sagacity can be claimed for the farmers of Huntingdon because they do not sow wheat more extensively than on one acre in seventeen of their cultivated lands. The comparison, nevertheless, suggests the enquiry whether a return in a particularly favourable year of fourteen or fifteen bushels per acre—not more than we get here in Lower Canada—was sufficiently remunerative to justify the farmers of Peterborough in putting very nearly one-fourth of the whole of their cultivated land in wheat, at the risk of not having enough pasture and meadow and root crops for the support of the stock necessary to furnish the manure by which their farms would be kept from running out. The same remark applies with equal force, whatever that may be, to Upper Canada

generally, in which, according to the census, taking an average for the whole country, about the same proportion of all the cultivated land was occupied with the wheat crop, as in the single county just specified. Among Mr. Hutton's deductions from a comparison between the United States and Canada, based on the census of 1851, was the following: "Canada should have fewer acres under wheat, as well as more under corn. There is too large a proportion of the land in Upper Canada under wheat—near one-fifth of the whole cultivated land, say four-ninths." In Ohio he estimated that at that period there was not more than one-tenth under wheat. If Mr. Hutton had lived till the census returns of 1861 were completed, he would have found that his warning had been disregarded, as they showed that in the previous year considerably more than one-fifth of the cultivated land of Upper Canada was under wheat.

The attempt to raise fall wheat has been almost entirely given up in this section for many years back. In 1860 only twelve acres were under fall wheat, in the whole county, yielding 149 minots. Some 30 or 40 years ago it was successfully grown, but, as the country became cleared up, the wind took off the winter covering in exposed places, and the wheat was winter-killed. The weevil has done some damage in this quarter, but the midge is scarcely known. Of spring wheat there is not a sufficiency grown to provide for home consumption. A good deal of flour for home use is bought in Montreal. A considerable proportion of the wheat ground, in the town of Huntingdon, is brought from Upper Canada. The current price for wheat, however, makes a fair crop remunerative, being generally 20 cents more than the Toronto prices.

The farmers here find that wheat sown any time in May will mature early enough. Those who have dry land prefer sowing it in April. This season, the snow went off much earlier than usual, and some wheat was put in the ground in this neighborhood about the 5th or 6th of April. I am informed that it was sown equally early around St. Hilaire, where Major Campbell's property is situated, being earlier than in any previous year within the memory of the "oldest inhabitant." The "Black Sea" and the "Rio Grande" varieties are the favourites in this quarter. I have a field sown with a mixture of the two, which is said to do well, both varieties ripening at the same time. The "Fife" and "Club" are also grown. The "Black Sea" has been found to deteriorate a good deal since its first introduction, and under the impression that a fresh supply would do better, the County Agricultural Society has got a quantity this season from the original source, and distributed it amongst leading agriculturists through the county. A neighbour of mine is trying, what is a new variety in this section, the "China," which has been cultivated successfully in northern New York, and is said to be proof against insects, and very productive. He tried a sample of it last year, but in the prevailing drought it shared the fate of other grain crops, and was scarcely worth harvesting. The time of wheat harvest here is the first half of August; 12 minots to the arpent, or 15 bushels to the Imperial acre, is considered a fair crop, but the yield frequently exceeds this. The soil around here, being light and gravelly, is not so favourable for wheat as in other parts of the county, but from 20 to 24 bushels to the acre are occasionally realized. One farmer tells me of his having got back 16½ bushels for one sown, and another of having got 22 bushels for one sown. Generally, however, during the last three or four years, wheat has been a comparative failure. With a good growth of straw, there is little grain; the ear may be large enough, but the kernels are few. Some attribute this to a running out of the seed, and look forward with hope to the results of the experiments conducted this season with the fresh supply of "Black Sea."

(To be continued.)

AGRICOLA.

The Price of Wool.

We have been favoured with the subjoined copy of the minutes of a meeting, of the Sheep and Shearing Committee held in the City of Hamilton, on the 27th ult. The question under consideration was, the price of wool this season.

"The Secretary Mr. J. T. Nottle said, an attempt is now being made to reduce the price of wool, on the ground, as is alleged, that the termination of the war in the United States will reduce the price of cotton, and consequently the price of wool. Now, I contend that whatever may be the effect of peace, there are other circumstances affecting this question which, when generally known, will enhance the price, considerably above the present rates. With your permission, I will read the Report of Messrs. Taft, Wedden & Co., of Providence, Rhode Island, to the Commissioner of Agriculture in the United States, on

the subject of wool. This document was procured for the use of the American Government, and the information it contains may be considered reliable.

The increase in the production of wool in this country is imperatively demanded by the manufacturing interest; the increase of machinery for the manufacture of woollen goods having been so rapid in the past five years that twice the amount of wool is now consumed by it that there was in 1860. The increase of wool called for will apply to all grades, as none of them are fully supplied by the domestic growth. The two extremes may be regarded as most sought for at this time; the one the fine Saxony, the other the long combing wools. The introduction of the fine long woolled Merinoes has driven out and taken the place of the fine Saxony; the latter in this country being much less now than formerly, for the reason that the heavier fleeces are more profitable to the farmer. We think the Saxony wool cannot be materially increased until we approach the point of producing nearly the amount of wool consumed by the country. The Leicestershire, or combing wool, is grown in the United States but to a limited extent, the worsted machinery now in operation here being supplied with this description of wool from Canada, the entire clip of which is barely sufficient to supply the machinery now in operation. This branch of the woollen manufacture is being largely increased by new mills, and by the enlargement of those already established. American wools may now be quoted at about \$1 per pound for the average; whilst the coarse Canada wool, if running largely to combing, will command from \$1 25 to \$1 30 per pound, and has once sold this season for \$1 45. With a present consumption equal to the entire clip of Canada, and but a small quantity grown in the United States, we think this kind of wool offers more inducements to the wool-grower than any other quality. Upon the repeal of the reciprocity treaty with Canada, this wool must pay a duty of 10 cents per pound, and 10 per centum at least, and to import it from England at this time it will cost 80 cents per pound in gold, or \$1 60 in currency. Fine Saxony wool is in very small supply in the market, and it is only grown in Western Pennsylvania, West Virginia, and in the south-eastern part of Ohio. The manufacturers working this grade of wool, are obliged to use fine foreign wool as a substitute for it, costing now in the grease about half the price of washed domestic—the domestic shrinking about 40 per cent., and the foreign about 65 per cent., in scouring.

With the view of obtaining an expression of the opinions of this meeting on the subject, I beg to move the following Resolutions, which are based upon the statements contained in this report:—

Resolved—1st. That the supply of Canada combing wool is not equal to the American demand.

2nd. That England is the only country that produces this description of wool in sufficient quantities to affect its price in the American market.

3rd. That under these circumstances, and so long as the present ratio of supply and demand continues, the price of Canada combing wool should be governed by the English market.

4th. That as the price of English combing wool imported into America at the date of this report was 80c. per pound, in gold, and as the price in England was 55c. at the same time, the cost of duty and importation is equivalent to 25cets. per pound.

5th. That in order to prevent the importation of English combing wool, the price of Canada combing wool should always be kept at such a figure, as to make it cheaper than English wool to the American manufacturer.

6th. That 15 cents per pound ought to be a sufficient margin to prevent such importation; and the cost of duty and importation of English wool being 25 cents per pound, the price of Canada combing wool should exceed the price in the English market by ten cents per pound.

7th. That the present price in England being 50 cents the price in Canada ought therefore to be 60 cents per pound.

These Resolutions, after having been discussed, were seconded by Alderman Mitchell, and carried unanimously.

On motion of Mr. Peter Grant, seconded by Mr. R. J. Hamilton, it was

Resolved, That in the opinion of this meeting it would prove of very great advantage to wool growers if they would fix upon one day in each week, say Saturday, to bring in their wool for the purpose of inducing wool buyers from a distance to enter into competition with the Hamilton wool buyers in the purchase of that article.

On motion of Mr. Geo. Roach, seconded by Mr. S. Sharp, it was

Resolved, That the Hamilton papers and THE CANADA FARMER be furnished with a report of this meeting, for the general information of farmers.

A vote of thanks to Wm. Hendrick, Esq., Chairman, terminated the proceedings of the meeting.

British Cleanings.

England is now paying for guano at the rate of about £1,250,000 per annum.

A young gentleman went to shoot rats in a straw rick at Taunton a few days since. On seeing the straw move he fired at the spot, and shot a man who had taken refuge there.

THE JONAS WEBB MEMORIAL.—The Emperor Napoleon III. has sent his contribution of £5 to the Jonas Webb Memorial Fund, that being the amount to which individual subscriptions were limited.

AGRICULTURAL JOURNALS AND POLITICS.—Agricultural papers in Britain do not show politics, as journals of that class are accustomed to do on this continent. A general election is near, and the *Mark Lane Express* earnestly warns the farmer that his first duty will be "in his own defence, simply to turn out the present government."

A BIRD'S NEST IN A GAS LAMP.—We learn from one of our British exchanges that "at the east end of Ketch railway station, on the Dufftown platform, are several gas lamps, supported on metal pillars. One of them has, at some time or other, had a small hole broken in the bottom, by which means a pair of chaffinches have got access to the inside of the lamp. There they have built their nest, and the parent bird may be seen at any time sitting in her crystal palace, quite unmindful of the noise made by passing trains or bustling passengers."

NOVEL MODE OF SUCKLING LAMBS.—The *Yorkshire Gazette* has the following:

"One of those remarkable instances of 'necessity being the mother of invention' is daily to be seen at the residence of George Crow, Esq., of Ornhams, near Boroughbridge, where three fine bouncing lambs are reveling in the luxury of sucking a fine young cow. The handy shepherd has constructed a platform, in the shape of a straw pillow, by which the lambs are enabled to get at the required elevation. Another farmer near is in possession of another singular instance of canine peculiarity, having a Dalmatian spaniel bitch suckling a kitten, to which it shows the most tender regard and attachment. The owner of the dog not wishing to keep any puppies, destroyed them all; and a stray kitten about the premises soon won the dog's confidence, and is daily suckled and cared for by its canine foster-mother."

PLAGUE OF LOCUSTS IN PALESTINE.—We learn from a British contemporary that the Holy Land has been threatened by scarcity, resulting from the visitation of the locust and the want of rain. The ground is reported to be so parched and baked, that unless there is a speedy deposit of rain, the results of the approaching harvest will be most serious. With respect to the locusts our contemporary remarks:—"From Gaza to Mount Lebanon and Anti-Lebanon, Hermon, the locusts literally filled the skies. This scourge, which has weighed upon the land during the whole of the last month, has caused general alarm, and the prices of cereals have risen 20 per cent. But it has fortunately been averted by a strong southerly wind, which has driven past a vast quantity of these destructive insects, on their course from the desert along the seaboard from south to north. Those that have escaped destruction at the hands of the natives have either laid their eggs or proceeded northward."

FLAX PROSPECTS IN IRELAND.—We learn from the *Irish Farmers' Gazette* that "the area under flax this year will fall considerably short of what it was last year. The crop of 1864 burned the fingers of many a small farmer, who, led away by the advocacy of enthusiastic and often inexperienced people, embarked in its cultivation to an extent beyond his knowledge of the crop, or the appliances at his disposal. Others, again, were dazzled by the brilliancy of exaggerated statements made by learned professors and others as to the profit to be derived from the crop. We regret to find that farmers, and shopkeepers who deal in flaxseed, will suffer serious losses this year from the failure of Riga seed. We have seen whole fields which have completely failed, and large breadths have been ploughed up and re-sown with Dutch or English seed, which is remarkably good this year, whereas the Riga is very bad. Had the flax instructors been sent out in proper time this great loss would have been saved. Those that have money or credit can get fresh, good seed, for it is not too late to sow; those that have neither will suffer loss, if they are not ruined."

MOLASSES AS A SUBSTITUTE FOR TURNIPS.—A correspondent of *Bell's Messenger*, writing from West Suffolk, states that he successfully supplied the total failure of his root-crop by the following expedient:—

"My plan has been (and is still carried on), to give to each bullock per day (divided into three meals), one pint of treacle dissolved in two gallons of water, and sprinkled, by means of a garden water-pot, over four bushels of cut chaff (two-thirds straw and one-third hay), amongst which a quarter of a peck of meal (barley and wheat) is mixed; the animals also having free access to water. The cost of the treacle and meal together is about 3s. per bullock per week. My bullocks (two-year-old Shorthorns), have grown and thrived upon the above diet, to my utmost satisfaction; and even during the present dry and warm weather they evince no lingering after roots or grass. I am well aware that the use of treacle for neat stock is no new discovery of my own, as I learnt the system while on a visit to a friend in Norfolk, where some graziers have used it in combination with roots, during many years past. Perhaps flax seed (linsed) boiled into a jelly and used in a similar way, may be a more profitable substitute for roots than treacle; but the preparation of it is attended with more expense and trouble."

PRESERVING THE HOP BINE.—A correspondent writes to one of our English exchanges on this subject as follows:—"In the autumn of last year I drew attention to the importance of preserving the hop-bine until the leaves had fallen, and the sap had ceased to circulate. I advocated the American system of growing the plant upon strings stretched from pole to pole, in order that the crop may be gathered without the necessity of cutting down. I have just returned from a visit to Kent, where I have inspected a field, upon a portion of which this plan was tried last year. The field was everywhere subject to the same cultivation, and, if anything, the crop was superior on the strings. The half acre upon which the experiment was made can now be distinguished without the slightest difficulty. Scarcely a plant has failed, and on an average the new bine is fully one foot higher than in any other part, and is strong and healthy in proportion. It is already well established on the poles, and is from three to four feet high, being at least a fortnight in advance of any garden I saw in my short tour. The experiment will be extended this year; and, as it is not yet too late, I would seriously urge an extensive trial by large hop growers, in the strong conviction that it is most important to reform the present system of picking, which is contrary to every principle of vegetable physiology."

PALE KERNEL MEAL.—The claims of this meal to rank among our artificial foods for fattening cattle and pigs, are much discussed in English agricultural circles at present; and some very interesting information—the results of actual experience—is supplied by a correspondent of *Bell's Messenger* as to its excellent feeding properties. He says:

"I consider it a most valuable addition to our artificial foods, and have used it successfully with cattle, sheep, and pigs. Last summer being so unusually dry, and the grass completely burnt up, I took the opportunity of trying this meal with milking cows and store cattle; the former received 3½ lbs. of meal per head daily, mixed with a little cut clover as a vehicle for the meal, using it morning and evening at milking time. The cows, owing to the scarceness of grass, were not making more than 3 lbs. of butter per head weekly; but with the addition of the food I have stated, they shortly rose to 7 lbs., and remained at this (continuing to receive the food) all summer. The store cattle, chiefly yearlings, received 2 lbs. per head per day, mixed with straw chaff, and ate it very greedily. With the sheep, there was at first considerable difficulty in getting them to eat it, owing to it being of a dusty nature; but by mixing it with a little cut vetches or clover in summer, or pulped roots in winter, and with the addition of a small quantity of locust beans ground into meal, they soon became very fond of it, and fed well. But the best proof of its great feeding properties I experienced was with some porkers. They were being fed with damaged wheat and pea meal, but upon this falling short, we used the palm nut meal alone; the next supply of wheat being rather long in coming, the pigs had nothing but the palm nut meal mixed with water; but so rapid was the improvement, that I at once ordered them to be kept upon this alone. In six weeks they were quite fat; I then purposely had some more put to feed, and never from the time we commenced feeding them till they went to the butcher did they taste any other food. This, I think, is the strongest proof of the feeding properties that palm nut meal contains. From the analysis of Dr. Voelcker we might expect it to be so, and I think this fully borne out by practical experience."



Training Squashes.

SQUASHES do best on new land. All the summer varieties have a hard shell when matured. The crook necks, and the white and yellow summer scolloped are the usual varieties grown. Different varieties should be planted far apart, as they mix very easily. Two or three plants are enough for a hill. The best protection from bugs is the box, covered with gauze or glass. Squashes occupy a great deal of ground when suffered to run and have their own way. When a person has but little room, and wishes to economise, a trellis for them to run upon is recommended, and is said to operate very successfully. Stakes or small posts are set up, two feet apart each way, and the seed planted in the centre. When the vines begin to run, they are trained upon slats nailed to the posts, and by throwing boards across the slats the fruit is supported, and will ripen much earlier than when allowed to lie on the ground half covered with leaves.

Squashes trained in this way can be made to occupy but little space, and are said to bear as profusely as when the vines run over the ground. To those who have but little room the plan is well worth trying. For late varieties, the best are the Hubbard, Boston Marrow, Acorn, and Vegetable Marrow. The Valparaiso is a tolerably fair variety when the season is just right. Immense squashes, sometimes grown, are rather for the sight than the table. They are coarse meated, and watery, compared with the little curly Hubbard, which is mealy, and as delicately flavoured as the sweet potato. As squashes are great runners, they do better with their ends clipped off. —*Utica Herald.*

LARGE CURRANTS.—H. J. Rhodes, Brighton, Iowa, writes that he raises the common currant as large as the cherry currant, by keeping the ground rich, and the bushes open so that light and air can have free access to them. He renews the wood every two years; the young plants grow until that time without much pruning; afterwards he cuts out all wood over two years old. —*Working Farmer.*

Dwarf Apples.

ANY variety of the apple may be dwarfed by grafting it on the Paradise or Doncau stock;—the former makes a smaller tree, but comes quickly into bearing; the latter is larger, and though longer in fruiting, will alternately afford the heaviest crops. While any variety of the apple may be thus treated, there are some kinds which are more suitable than others for dwarfing. Among the best sorts for dwarfing are the Red Astracan, Jersey Sweet, Baldwin, Dyer, Summer Rose, Benoni, and Bough. Our engraving represents a Dwarf Red Astracan apple tree, eight years old, growing on the grounds of those enterprising fruit growers, Messrs. Elwanger and Barry, Rochester, N. Y. As an ornamental object in a garden, what can be prettier than one of these apple bushes covered with blossoms, or laden with fruit? Dwarfing makes no difference as to the size of the apple product; it only affects the size of the tree, while the fruit is as large, and in some instances even larger, on the dwarf stock than on the standard.

The chief advantages of the dwarfing process are: 1. Economy of space. A tenth of an acre may be planted with forty or fifty trees without crowding. 2. Greater suitability of the trees for town



and city gardens. 3. Easy access to the fruit. 4. Early bearing. This is the chief recommendation of the dwarfing system. Trees thus treated will begin to bear the third year, and at five or six years old will, if properly cultivated, afford a bushel or more to the tree. A small garden planted with summer and autumn varieties will supply a family with early apples while they are scarce and dear in the market, and thus give a valuable return for the space occupied by them. These miniature apple trees deserve to be more widely cultivated. They are somewhat more expensive than the common standard orchard trees, and this is doubtless one reason why they do not come into more general use.

BEST SOIL FOR GRAPES.—According to the Ohio Pomological Society, a better quality of grapes, with heavier must, can be produced on a strong clay soil, or one of loamy clay, with a limestone or slaty subsoil, than on sandy ground or alluvial deposits. If this be so, the soil through a considerable portion of the central counties of New York must be well adapted to grape culture. The Society also agreed, that, in all cases, under-drainage was necessary to success in grape growing. Grapes are becoming more and more extended in their cultivation throughout the State

and vain glory is a flower which never comes to fruit.

PEARS FOR MASSACHUSETTS.—The Massachusetts Agricultural Club have unanimously agreed upon the following as the twelve best varieties of pears, taking all things into consideration, as quality, thriftiness of the tree, value of market, etc., viz.: First six, the Bartlett, Louise Bonne de Jersey, Urbaniste, Beurre de Anjou, Sheldon and Seckel; second six, the Onandaga (Swan's Orange), Merriam, Doyenne Boussook, Vicar of Winfield, Paradise d'Automne and Fulton.

GARDEN SHELTER The importance of garden shelter, is by no means enough considered. I do not indeed name my own method (hemlock hedging) as the best to be pursued; flanking buildings or high enclosures may give it more conveniently in many situations; a steep, sudden hill side may give it best of all; but it should never be forgotten that while we huddle the garden soil with what plants and trees we best love, we should always give their foliage the protection against storms which they covet, and which, in an almost equal degree, contributes to their luxuriance.

To the dwarf fruit as well as to the grape, this shelter is absolutely essential; if they are compelled to fortify against oppressive blasts, they may do it indeed, but they will in this way dissipate a large share of the vitality which would else go to fruit. Young cattle may bear the exposure of winter, but they will be pinched under it, and take on a meagre look of age, and expend a great stock of vital energy in the contest. —*My Farm at Edgewood.*

THE ONION.—Mr. J. S. Ives, of Salem, Mass., in a communication to the *Country Gentleman* states that he has known fields that produced last year \$1,600 worth of onions per acre, and which sold at that price in the Boston market. He raises good crops of well developed bulbs on lands formerly used for potatoes, corn, or mangel-wurtzel, but more dressing is required when onions follow other crops. For enriching the soil for the crop on light lands green cattle manure is preferred, placed on the field in small heaps in January and February, so as to pulverize by the action of frost, and spread at the time of ploughing. To succeed in onion culture, he remarks what we have frequently observed, and what has often come under our own experience, that "the best seed of the best variety, grown and ripened in the best manner" should be used. Many failures occur from the use of poor seed. Mr. Ives says that onions intended for seed should be kept at a temperature as near the freezing point as possible. The variety in cultivation in the vicinity of Salem, is the "Dunver's oval onion," which he says produces more in weight and measurement than the flat kinds.

GARLICKS AND ONIONS.—Those skilled in simples, Eastern as well as Western, praise garlic highly, declaring that it strengthens the body, prepares the constitution for fatigue, brightens the sight, and by increasing the digestive power obviates the evil effects produced from change of air and water. The old Egyptians highly esteemed this vegetable, which with onions and leeks entered into the list of articles so much regretted by the Hebrews, (Numbers XI 5; Koran, chap. 2.) The modern people of the Nile, like the Spaniards, delight in onions, which, as they contain between 25 and 30 per cent. of gluten are highly nutritious. In Arabia the Wahhabis bear a prejudice against onions, leeks, and garlic, because the prophet disliked the strong smell, and all strict Moslems refuse to eat them immediately before visiting the mosque or meeting for public prayer. —*Benton's Mecca.*

A SECRET IN PLANT GROWING.—A Cincinnati correspondent of the *Gardeners' Monthly* writes:—"An old friend of yours, by the name of HITCHCOCK, here, is the best plant grower that I have ever seen. He confines himself chiefly to Roses, Verbenas, Heliotropes, Mignonette, and Fuchsias, and a few other things; but it would delight you to see such fine healthy plants as he has got. It is worth going miles to see his green house,—and what do you think is his secret? Why he pots in rotten cow-dung, and nothing else. There is a secret for you! He gathers it up in the fall, and keeps it in a dry place. Before potting he puts it through a sieve; and when potting puts a little of the coarse in the bottom of the pot, (no crock or drainage of any kind,) and uses the fine round the sides. Every thing thrives in it, from a Begonia to a Scarlet Geranium. No peat! no loam! no leaf mould! He propagates in sand, and pots in cow-dung! That is his Alpha and Omega."

CURE FOR DOGS.—William B. Barnes, Davenport, Iowa, recommends a cure for blight in pear trees, which we should like to see universally adopted. We think if it did not cure the pear blight, it might rid the country of another blight ten times more destructive than all the diseases that ever crept into pear orchards. The remedy which, he says, proved effectual upon thirty years trial is to dig a hole down among the roots of the pear tree, and bury a dead dog therein. He mentions one old tree thus treated, which recovered and took on a vigorous growth, and bore a full crop every year after. We have no doubt of the truth of this statement, and hope the remedy will be applied to every pear tree in America. The sooner it is done, the more profitable it will prove to thousands of farmers who are prevented from keeping sheep in consequence of the worthless curs in the country, which may now be appropriated to some profitable purpose. —*N. Y. Tribune.*

Entomology.

Collecting and Preserving Insects.

From the Illustrated Annual Register of Rural Affairs.

Entomologists generally know so thoroughly themselves the first principles, or rather steps, of the science, that they seldom speak of them in writing for the beginner. A simple description, therefore, of the methods of collecting and preserving insects will be found of much use to those wishing to know more of them.

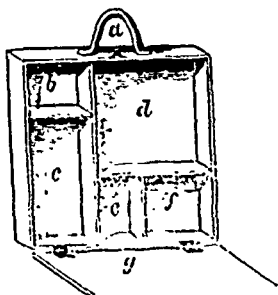


FIG. 1.

BOX OF WOOD FOR COLLECTING INSECTS, 8 inches square, 2 inches deep.

- a. Handle, for carrying.
 - b. Apartment for pins.
 - c. Place for bottle of alcohol.
 - d. Entrance for Butterflies, &c.
 - e. Bottle of Cyanide of Potash.
 - f. Place for Beetles, Bugs, &c. on cork.
 - g. Lid of box, partly shown.
- A small padlock must be kept on it to keep out intruders and meddlers.

COLLECTING INSECTS.—The collector requires few instruments, and these are easily made at home. The most important of them is the hand net (fig. 2), which may be made as follows: from a pine board one inch thick cut a strip an inch wide, and from four to eight feet long (six feet will be found a very useful length), trim this strip round, tapering it slightly towards the ends, and sand-paper it well, that there may be no danger of running splinters into your hands. This will make a good handle. Now, with a piece of stout wire, say about 3-16 inch thick, make a hoop one foot in diameter, and fasten the two ends securely into one end of the pole handle; take strong mosquito netting of any colour, though white is preferable, from the facility with which anything may be seen through it, and make a bag two feet long; this must be fastened round the hoop, and completes the net. In using it the collector creeps stealthily towards the butterfly, for instance, until within striking distance, when the net is carefully and slowly brought as near as prudent, when a sudden dash will, with a little practice, lay the insect in the bottom of the net, a half twist of which will fold the bag over, and closing the mouth, prevent it from escaping. There is an excitement in thus warily approaching an insect which has perhaps led you a long chase before it settled, that you have not felt surpassed when with gun and dog you have followed large game. It is really wonderful how sly some butterflies and beetles are. It sometimes seems as if it were almost impossible to get near enough to use the net, and yet, when, after a long, cautious chase, we have succeeded in capturing a rare specimen, a feeling, a pleasurable satisfaction comes, that amply repays the toil. A few pins, prepared expressly for the purpose, with long slender bodies and very

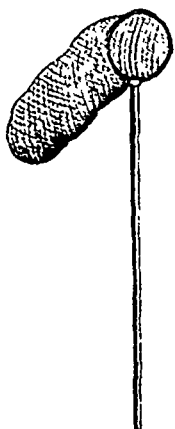


FIG. 2.

Net for Catching Butterflies, about ten inches or a foot in diameter.



FIG. 3.

Impaled Butterfly, in thorax.

FIG. 4.

Mode of Impaling a Fly.

small heads, will be found necessary to impale the specimens for preservation, (fig. 3, 4, 5). Butterflies are pierced through the middle of the thorax, or just between the wings. Rather generally have the pin through the right elytra or wing case, not far from the connection with the body. Flies, wasps, &c., between the wings. So also with locusts, crickets, darning needles, &c.



FIG. 5.

Mode of Impaling Spiders.

The entomologist finds it convenient to carry at all times a small box divided into small compartments in which to put beetles that he may chance upon in going about. A good size for this box is, say 3 in long, an inch wide, and one inch deep, with a sliding lid fitted in grooves. The partitions inside should be so fixed that they may be removed, in case a large insect should require place. Some carry pill boxes in nests, (fig. 6.)



FIG. 6.

Case or box for catching insects, partly open to show the hole.



FIG. 7.

Very small insect, fastened with gum on paper, set on small piece of cork. Coleoptera (beetles, &c.), Orthoptera (grasshoppers, locusts, &c.), Diptera (flies, gnats, &c.), may be most easily killed by plunging them into alcohol. If the alcohol is nearly pure, it should be diluted with one-fourth part of water, otherwise if the insects be left in a day or two, it will injure them. They should be left in the bottles several hours, or the young collector, who is in too great haste to set his captives out, may be astonished by finding that they have come to life again, having been only stupefied. All insects of the more delicate shades of purple, are best killed by immersion in boiling water, as the spirits are liable to make the colour fade; and to this end, when captured, should be placed in one of the boxes which are carried on the field. Many of the smaller butterflies may be killed by a smart pinch in

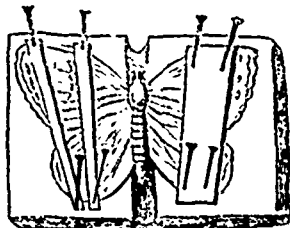


FIG. 8.

Mode of stretching Butterflies on cork (or soft wood), while they are yet fresh, with pins and strips of card paper—either two strips, as on the left, or one broad one, as on the right—the pins to be set in the large nerves.

the thorax; a little practice will enable the learner to find the right spot; the large bodied moths and sphinx moths, are more quickly killed as follows: procure at the druggists a small quantity of cyanide of potash (a deadly poison), which dissolve in an ounce of water, as much as the water will hold; carry this in the vest pocket when collecting. A prickler should be made, of hard wood, or better of bone, with a sharp point; when a capture is made, this is dipped into the solution and forced into the thorax of the moth, till it strikes the ganglionic system of nerves, the largest knots of which are in this part of the body; the poison rapidly circulates, and in a second or two the moth is entirely dead.

Boxes, or cases, to keep the insects in permanently, may be made of any size—12 by 18 inches are suitable dimensions, and should be made with a close fitting cover; or, if they are double, the two halves should join closely together; such case should be about 2½ to 2¼ inches deep, and should be lined on the bottom with thin strips of cork, which are sold for this purpose, which are 4 inches wide and ½ inch thick; or, what is inferior, with very soft wood, that the pins may not be bent in forcing them in. Many keep their collections in cabinets, containing drawers, which may be of any convenient size, and of the same depth as the boxes. A light placed after dark in a window, and one farther in the room, will frequently draw a large number of insects. Many varieties of crepuscular and nocturnal insects may be caught by washing the trunks of the trees in a grove with the following preparation, applied with a brush: a thick syrup, made of brown sugar, with a small quantity of rum, three to five drops of the essential oil of bitter almonds improve it, but is not necessary. An hour or so after the application, a visit to the trees will probably be rewarded by finding a number of moths feeding on the intoxicating sweets.

A good trap to catch carrion beetles is to kill a woodchuck or some other small animal, and suspend it to a low branch of some tree that stands out by itself; as soon as it begins to putrify, all varieties of this family will flock to it, and may be shaken out on a newspaper, spread underneath. As many beetles feed only early in the morning, before sunrise, the collector must rise betimes.

There is no branch of Natural History that will afford so much amusement and exciting interest, with as little labour, as entomology; and in an economical point of view, no good farmer can afford to be without the knowledge that some attention to the science will bestow. The day has passed when an observer of even the apparently most trivial objects of Nature is to be looked upon as no better than an overgrown child, and the insect hunter and observer has taken an honorable place in the scientific world. Certainly in no other branch of Natural History than this do we find more wonderful and conclusive evidence of the wisdom and providence of the great God of the Universe, who is equally the Creator of the most gigantic mammals and the microscopic animalculæ, and each have their allotted place to fill in the economy of Nature.

Entomology, or the study of insects, includes the investigation of the four different stages of insect life, namely: the eggs, larvæ or worm, pupa or chrysalis, and the imago or perfect insect. The eggs vary much in shape, being oval, globular, conical, cylindrical, pear-shaped, &c., &c., and are invariably deposited, by the unerring instinct of the parent insect, where the young larva can find nourishment immediately on being hatched. They are generally smooth, and are of varying colours, white, yellow, orange, pale green predominating, though other colours are found; some have one or more bands of light and dark brown.

When the egg is hatched, the insect appears in a shape in which it is usually called a caterpillar, grub or maggot—in more scientific terms, a larva—and in this stage their main occupation is to eat and grow until the germ of the future perfect insect is complete within them, when they assume the next phase of existence, the pupa state. The pupæ are generally, then, under ground, of varying shades of brown, some highly polished. Those that are found above ground are frequently beautifully ornamented with spots of bright colours, as green, silver and gold. The rudimentary



FIG. 9.

Case for permanently keeping insects, 14 x 22 in., 2 in. deep, in the clear; lined with cork inside, and with a glass door on hinges. The whole to be hung up on the loop at top.

ments of the wings, legs, antennae, eyes, &c., of the future insect, may be observed with more or less distinctness in the pupa of different species; the chrysalis of some butterflies, for instance, hardly show them at all, while on those of most beetles they are strongly marked and easily recognized. While in this apparently death-like condition, the final changes to perfection are proceeding, and by a wise provision of nature the continuance of this state is regulated by the temperature of the atmosphere, so that the development of the perfect insect shall not take place until its food is provided for it, and a suitable provision made for the right deposition of its eggs. After emerging from the chrysalis, the insect lives from a few hours to several months, and it is in this state that they are most frequently noticed, though they are many of them apt to produce a morbid impression upon the mind of an agriculturist during the time they are larvæ. The imago is the condition in which insects are usually collected for cabinets.

Veterinary Department.

Laryngitis, or Sore Throat in Horses.

The disease termed laryngitis consists in inflammation of the lining membrane of the larynx. It often exists in connection with catarrh or common cold; but it also occurs as a distinct disease, and is a very common affection of the horse during the spring months. Young horses are most subject to it. In some seasons it occurs as an epizootic disease, and is generally accompanied by a low typhoid fever. The symptoms of laryngitis are well marked: the horse stands with his head straight out, moving it as little as possible. He is unable to eat, not because he is feverish, but on account of the great pain it causes him on attempting to swallow. There is also present a hard, husky cough, accompanied by a copious discharge of purulent matter, of a yellow or greenish colour, from both nostrils. At this stage the respirations are very little, if any, increased, and the pulse is weak. The same symptoms are also present in the early stage of distemper or strangles, but the latter disease soon shows itself by the tumefaction of the glands. When laryngitis occurs as an epizootic it has a great tendency to descend, and often leads to inflammation of the lungs. In severe cases the ears and eyes are cold, the bowels constipated, the urine scanty and of a dark colour. The surface of the body is alternately hot and cold; and in many instances the breathing is very much laboured. If the ear is applied to the windpipe, a rattling noise is heard at every inspiration; and when a case is likely to end fatally, those symptoms become more aggravated. In favourable cases a horse generally recovers from laryngitis in about thirteen to fourteen days, but we often meet with cases which leave behind a cough for weeks, or even months, notwithstanding that all other symptoms have disappeared. The cause of the cough taking such a chronic form is owing to the great complexity of the lining membrane of the larynx, in which are imbedded so many glands; and as these, and the cartilages, are all involved, so long as inflammation of any of the glands exists, it causes an irritation of the membrane, and, as a consequence, there is a continual cough. A termination of laryngitis is chronic cough, and in such cases there is actual thickening of the mucous membrane.

In the treatment of this disease, and in all other chest diseases, we recommend the patient to be housed in a comfortable, well littered and well ventilated loose box. Have the legs well hand-rubbed and bandaged, and the body comfortably clothed. Apply to the throat a sweating blister, or any stimulating embrocation. If the bowels are inactive, one to two drachms of aloes should be administered, and also soap and water clysters. If the pulse is very quick the tincture of aconite, in doses of fifteen drops every one or two hours, will be of decided benefit in allaying the fever. If the cough continues for some time, the extract of belladonna and camphor should be given.

Navel-ill in Colts, Calves, and Lambs.

Foals, calves, and lambs, are all liable to suffer from navel-ill, or inflammation of the structures forming the navel chord. When the young animal comes into the world this bond of communication between the mother and foetus, now no longer required, is cut or torn asunder. A little bleeding occasionally occurs, but as the several vessels rapidly and forcibly retract, the hæmorrhage amongst the lower animals

is seldom serious, and the few drops of blood lost are often beneficial in relieving that overloading of the lungs with blood which occasionally induces fatal asphyxia in newly-born animals. When blood continues to flow unduly from the end of the chord, a piece of thread or tape should be tied firmly round it; and as the mother is apt to lick and bite at the bloody end of the chord, it is always advisable to keep her tied up for a few days. From mares and cows thus irritating with their teeth the blood-smearred ends of the chord, inflammation is often set up. Another common cause of navel-ill is the violent tearing asunder of the chord too close to or within the belly of the young animal. Inflammation is thus established amongst very vascular structures, the serum and pus produced do not readily find vent, and being retained cause much local and constitutional disturbance. Exposure to cold at or immediately after birth may likewise induce inflammation of the sensitive parts about the navel. Overcrowding, filth and damp also sometimes exercise a like injurious effect.

In all animals the symptoms are much alike. The navel becomes hot, swollen and tender. A thin, watery discharge often drops from it. The little patient is dull, listless, disregards his food, moves stiffly and unwillingly, and is feverish. His bowels are confined, and his urine scanty, often bloody, and sometimes discharged, as during foetal life, through the navel opening. Usually he lies outstretched, breathing hurriedly, and moaning with pain. From the external opening the inflammation extends along the urachus to the bladder, which is found after death much reddened and inflamed, and sometimes filled with clots of dark-coloured blood. The peritoneal lining of the abdominal walls is inflamed, exhibiting a network of engorged red and purple vessels. Along the vessels of the inflamed chord the inflammation travels, causing congestion and even inflammation of the liver, and formation of pus in the inner coats of the iliac vessels. Under such an accumulation of evil the little patient seldom bears up long, and unless relieved, usually dies in from one to three days.

So soon as the navel of any young animal is noticed to be swollen or tender, it should at once be gently fomented and carefully examined. Within the abdominal ring there will usually be found the inflamed and suppurating ends of the injured vessels, and for any matter formed an early and ready exit must be provided. A little oil, lard, or goose-grease is often smeared over the parts, being properly approved of as a soothing and softening application. If the bowels are constipated and the little animal feverish, a dose of castor oil should be given in milk; whilst to prevent the possibility of her injuring the irritable parts with her excessive affection, the mother's head should be kept tied up, and the foal, calf or lamb, quietly kept in a comfortable box or small sheltered yard, where it will not be tempted to move too freely about. If the swelling, in spite of such measures, continues to increase, it may often be relieved by being lightly scarified, or in popular phrase, "pricked in several places" with a sharp-pointed pen-knife or lancet, the fomentation the while being continued almost without intermission. The patient's strength will require to be supported by small quantities of milk given at short intervals, and rendered more nourishing by the addition of a little port wine.—*N. B. Agriculturist.*

Black Teeth in Swine.

LAST year this disease was somewhat prevalent and destructive in New England, and those having swine should be on their guard now that the season for hot weather has again come. Confinement from the ground is believed to be one of the causes of this troublesome disease. Its commencement is indicated by loss of appetite, tumors and weakness in the hind legs, and frequently in the loins, with staggering and vertigo. As soon as these symptoms appear, administer a dose of brimstone or flour of sulphur. Frequent applications of buttermilk to the back and loins, and gentle rubbing with a cob, will generally bring relief, and frequently entire cure. The animals should also be allowed a liberal supply of loam, rotten wood, and fresh cool dirt. If there is a yard attached to the piggery, the animals may be permitted to run out if the weather is clear and pleasant.

No hog should be kept entirely away from the ground, and none without access at all times, to a dry bed, entirely away from the wind and sun. Another great oversight in keeping swine is in not giving them all the pure fresh water they will drink, especially in hot weather. Once each day, at least, a bucket of cool water should be turned into a clear trough, where the hog can drink what he pleases. The opinion seems quite common that swine do not need much drink. Perhaps they do not require so much as some other animals, but unless they get it in their will, they should have access to water every day.—*N. E. Farmer.*

The Household.

Liebig's Food for Children.

It is stated that the distinguished chemist, Liebig, finding that one of his grandchildren must be raised upon other food than his mother's milk, and knowing that cow's milk was not a sufficient substitute, devised a compound which, under the name of "Liebig's Soup," is now considerably employed in Germany. It is prepared as follows: "Half an ounce of wheaten flour and an equal quantity of malt flour, seven grains and a quarter of bicarbonate of potash, and one ounce of water, are to be well mixed; five ounces of cow's milk are then to be added, and the whole put on a gentle fire; when the mixture begins to thicken it is removed from the fire, stirred during five minutes, heated and stirred again till it becomes quite fluid, and finally made to boil. After the separation of the bran by a sieve, it is ready for use. By boiling it for a few minutes it loses all taste of the flour." The malt flour can be prepared by pounding or grinding malt obtained from the brewers. The bicarbonate of potash is added to give the necessary alkaline quality; it may be had at the druggists, and should be the bicarbonate in transparent crystals, and not the ordinary carbonate in dull white grains.—*American Agriculturist.*

WHITEWASH THAT WILL NOT RUB OFF.—Slake the lime in the usual way. Mix one gill of flour with a little cold water, taking care to beat out all the lumps; then pour on boiling water enough to thicken it to the consistency of common starch when boiled for use. Pour it while hot into a bucket of the slaked lime, and add one pound of whiting. Stir all well together. A little "blue water," made by squeezing the indigo bag, or a little pulverized indigo mixed with water, improves it.—*Burnt New Yorker.*

COOKING POTATOES.—We have seen boiled potatoes from an untaught cook coming upon the table like lumps of yellow wax,—and the same article, the day after, under the directions of a skillful mistress, appearing in snowy balls of powdery lightness. In the one case, they were thrown in their skins into water, and suffered to soak or boil, as the case might be, at the cook's leisure, and after they were boiled to stand in the water till she was ready to peel them. In the other case, the potatoes being first peeled, were boiled as quickly as possible in salted water, which the moment they were done was drained off, and then they gently shaken for a minute or two over the fire, to dry them still more thoroughly. We have never yet seen the potato so depraved and given over to evil, that could not be reclaimed by this mode of treatment. As to fried potatoes, who that remembers the crisp, golden slices of the French restaurant thin as wafers and light as snow-flakes, does not speak respectfully of them? What cousinship with these have those coarse, greasy masses of sliced potatoes, wholly soggy, and partly burnt, to which we are treated under the name of fried potatoes *à la America*?—*Mrs. Stowe.*

HOW TO MAKE CORN PUDDING.—"But have you nothing farther to tell me," she continued, "about corn-puddings?"

"I have," I answered; "and as many other persons besides 'H. Franco' may like to eat of corn-puddings, and as I know you will be likely to circulate the account through the sewing-circle"—here Mrs. Gray looked vexed—"I will give you the recipe for making this truly delectable dish, which is of Indian origin, improved upon by the Quakers, and which, when eaten, should constitute the sole repast of what is known in Nantucket under the name of 'tea.'"

"Take four dozen full ears of sweet green corn"—here I got off the fence, and began to pluck the ears—"score the kernels and cut them from the cob. Scrape off what remains on the cob with a knife. Pound the corn cut off in a mortar. Add a pint and a half or one quart of milk, according to the youngness and juiciness of the corn. Add four eggs well beaten, a half tea-cup of flour, a half tea-cup of butter, a table-spoonful of sugar, and salt *quantum sufficit*. Bake in a well-greased earthen dish, in a hot oven, two hours. Place it on the table browned and smoking hot, eat it with plenty of fresh butter and be thankful."

Having by this time picked the necessary number of ears, I gave Mrs. Gray to understand that we would go home, and that I would immediately proceed to make the pudding, which, much to the indignation of the cook, and the intense delight to the black boy, I did. My wife, when we came to eat it, declared it was equal to anything of which she had ever partaken, and declared that if I would only go to New-York and open a corn-pudding shop, I might make my fortune.—*My Married Life at Hillside*

Miscellaneous.

The Resources and Business of Canada.

BY GEORGE AUGUSTUS SALA.

I MAY say at the outset that Canada contains about three hundred and sixty thousand square miles of territory; has one hundred and sixty million acres of land, of which forty millions are already granted, and eleven millions are under cultivation; and has a coast line from the Gulf of St. Lawrence to Lake Superior of over two thousand miles. Canada now possesses over two thousand miles of railroad, traversing the country in all directions, and adding immensely to the value of water communication and private property. These railways cost one hundred millions of dollars. Our bridge alone cost twelve millions. Canada has four thousand miles of telegraph lines, which transmit three quarters of a million of messages every year. Canada has two hundred and fifty miles of canal, which cost sixteen millions of dollars, the first year carried over three million tons of freight, from which the Provincial Government received tolls amounting to nearly four hundred thousand dollars. The rivers of Canada are numbered by thousands; three of them, with their tributaries alone, drain one hundred and fifty thousand square miles of land. Five or six Canadian lakes cover eighty-four thousand square miles of surface. The mail routes of Canada embrace fifteen thousand miles of waggon-roads. On these are two thousand post-offices, which distribute annually eleven millions of letters, to say nothing of newspapers. The cost of maintaining the Post-Office Department is itself three quarters of a million dollars a year; nevertheless the income exceeds the expenditure.

The mineral wealth of Canada is almost fabulous, and only awaits the introduction of British and American capital to astonish the world. The Acton copper mine in Lower Canada is among the richest in existence, although the operations of the present proprietors have been partially paralyzed by attempts to do too much. The Lake Superior copper has already become famous for the extent of the deposit, and the value of the ore, while Lake Superior and St. Maurice iron need only to be mentioned, to arrest the attention of practical miners. The iron deposits of the Lake Superior country are believed to be inexhaustible. The gold diggings of the Chaudiere and Gilbert rivers in the Eastern Townships, have turned out well within the last two years. I have seen the men who handled the precious metal in that region. Americans have taken up immense quantities of land there, and are preparing to invest largely in mining operations next year; some have leased blocks of land from one hundred to two hundred square miles in extent each. A new company has just been formed in New York, with the large capital of five millions of dollars, to operate on the Chaudiere. The capital of companies and private individuals now engaged there, is counted by millions. The trade returns show that the produce of the mines, exported from Canada last year, amounted to nearly one hundred thousand dollars. Probably as much more went out of the country in private hands, besides what was retained by persons belonging to the Province. The oil wells of Upper Canada are still flowing; the region embraced by these is some ten thousand square miles in extent.

The militia number ninety thousand men. The volunteers alone number some thirty thousand. Four hundred thousand pounds of powder have been manufactured at Hamilton for their use this year. They require about one hundred and twenty drill instructors. Three hundred companies received clothing from Government last year, and the payment to Brigade-Majors, and for drill instruction alone, amounted to seventy-five thousand dollars. The cost of the militia last year was nearly half a million. This year military schools have been established at great expense, and company and regimental drill has been more frequent; the whole expense can scarcely fall short of three quarters of a million of dollars. The population of Canada capable of bearing arms numbers nearly half a million.

In Canada there are nearly three hundred newspapers, employing nearly two thousand persons; there are also three thousand clergymen. From 1829 to 1861, one million of emigrants arrived at the ports of Quebec and Montreal alone, one-third of whom took up their residence here. The Government gives a half million of dollars for educational purposes, and municipalities and people raise nearly two millions more. One University in Canada has cost private persons from two to three hundred thousand

dollars. There are over eight thousand schools of all descriptions in the Province, educating nearly six hundred thousand boys and girls. Over two million acres of land are appropriated to the Collegiate Institutions of Lower Canada.

The Manufactories of Canada are completed on a most extensive scale. To commence with the manufacture of Lumber, Canada contains over two thousand saw-mills, and in one year cut nearly eight million feet of lumber! She has over two hundred distilleries and breweries, which last year produced over nine million gallons of spirits and malt liquors, yielding an excise duty of over seven thousand dollars. These breweries and distilleries consumed over one million six hundred thousand bushels of grain and malt. There are at least one thousand flour, grist, and oat mills in this country; two hundred and fifty carding-mills; one hundred and thirty woollen factories, and five hundred tanneries. Other and less important features, are numberless. In speaking of the crops of Canada only millions can be used. Canada produces annually between twenty-five and thirty million bushels of wheat; twelve million bushels of peas; forty million bushels of oats; over a million and a half tons of hay; thirteen million bushels buckwheat; twenty-eight million bushels potatoes; nearly ten million bushels of turnips; kills thirty million pounds of beef; shears five and a half million pounds of wool; kills four million pounds of pork, and makes from forty-two to forty-five million pounds of butter.

The cattle, milch cows, horses, sheep and pigs on hand, number considerably over two millions. This is something like farming. Time would fail to give anything more than an outline of the products of this Province. Of her Fisheries, however, I may say that they produce annually one and a half million dollars. Lower Canada alone has two thousand five hundred fishing vessels. The Magdalen Islands, which belong to Canada, own two hundred and seventy fishing craft. The Banking Capital of the chartered banks of Canada is some thirty-three millions—much less, I should judge, than the necessities of her trade require.

The Province paid seven hundred thousand dollars last year to secure the "Administration of Justice" alone; while the cost of Legislation amounted to over six hundred thousand dollars more. The Board of Works has disbursed, on an average for the last ten years, nearly one million and a quarter dollars annually! The Canadian Government has received and disbursed in that period probably one hundred and thirty million dollars of revenue. The income for the present year is probably sixteen millions.

The imports of Canada last year footed up forty-six millions, and her exports forty-two millions. Of her imports (as stated in another of my letters), twenty-three millions were from the United States, and of these, nineteen millions came in free under the Reciprocity treaty. Canada's imports from Great Britain amounted to twenty millions. Of her exports (forty-two millions), seventeen millions went to Great Britain, and twenty millions to the United States. For instance: the States took over three hundred thousand dollars worth of copper, iron ore, scrap iron, stone and earth oil, and one hundred thousand dollars worth of fish and furs; nearly four and a half million dollars worth of plank, boards, and other descriptions of lumber and timber; over four million dollars worth of horses, cattle, pigs, sheep, butter, wool, hides, sheep's pelts, &c.; nearly nine million dollars worth of barley, oats, wheat, flour, meal, peas, &c.; and over half a million dollars worth of tobacco, cotton, hardware, leather, rags, sugar boxes and other manufactures, besides coin, bullion, and other articles, valued at nearly two millions more. Among the larger items of Canadian exports to all parts of the world in 1863, I may mention the following:—three hundred and two million feet of plank and boards; sixty thousand standard of deals; nine hundred and twenty thousand tons of hardwood, pine and tamarac; one hundred and fifty-six thousand cords firewood, &c.; seven million lbs. butter; two and a half million lbs. wool; one million barrels flour; nearly twelve million bushels wheat, oats, peas, barley and rye; over a million lbs. of tobacco; one hundred and fifty thousand head of horses, cattle, swine and sheep; nearly two hundred and fifty thousand cwt. of fish, and about half a million gallons of mineral oil. The receipts of flour and grain at Montreal in '62, equalled twenty-five and a quarter million bushels; the exports were nearly seventeen million bushels. The storage capacity of the Montreal warehouses is over a million bushels of wheat, and a half million barrels of flour. The tonnage of vessels that arrived in Montreal in '62, was over a quarter million, exclusive of river craft. One hundred and seventeen sea-going vessels have been lying in the port of Montreal, and over three hundred in the port of Quebec, at one time. The grain carrying capacity of the crafts connected with the inland trade of Montreal, is equal to two million bushels!

The gem cannot be polished without friction, nor man perfected without adversity.

An Irishman, whose father had been hanged, was accustomed to say of him, "He died suddenly upon a platform at a large public meeting."

A NEW METHOD OF CLEANING CLOCKS.—A singular method of cleaning brass clocks is reported by a correspondent of the *Scientific American*, being neither more nor less than boiling them as one would their potatoes. "Rough as the treatment may appear," he says, "it works well; and I have for many years past boiled my clocks whenever they stopped from accumulation of dust or a thickening of oil upon the pivots. They should be boiled in pure or rain water, and dried on a warm stove or near the fire."

NEW LOCOMOTIVE.—On Saturday a small light locomotive on a new plan was running about Lilsford-road, Camberwell. A little boy about eight years old was the acting engineer and steerer. There was likewise on it a bigger boy, of fourteen or fifteen years of age, to be appealed to as consulting engineer in case of difficulty. The carriage is on four wheels. The boiler is carried in a little cradle in front, and the engine and water supply tank are under the seat. The weight of the carriage, boiler, engine, and water tank included, is about 2 cwt. The power is about half a horse nominal. There was no smoke or steam puff, and the little engineer had the machine under perfect control, and stopped it in its length upon request. The cost of fuel for working is said to be under a half-penny an hour.—*Bell's Messenger*.

THE SECRETS OF THE DEEP.—What has become of the innumerable bones and teeth and scales of fishes, that, for all the years gone by, have died in the broad Atlantic? Where are the remains of the many ships that have been swallowed up by its waves? Where the gravel heaps left behind by the icebergs that have been melted in floating down from the Polar Seas? Where, also, the substances drifted across by the Gulf Stream and other currents that traverse the ocean? Nothing—not one solitary indication of all these; but in their place a fine, impalpable, tenacious mud, everywhere extending, and made up of little particles of carbonate of lime, secreted by countless myriads of animalcules, the food perhaps of whales and fishes of the surface, but more probably the sole inhabitants of those great depths which other animals more highly organized would in vain attempt to penetrate. Truly may we say that the secrets of the great deep are mysterious and grand—and that the search of them amply repays the labour of investigation.—*Professor Ansted*.

Markets.

Toronto Markets.

"CANADA FARMER" Office, June 12, 1863.

The weather has continued exceedingly favourable to the growing crops, and from all quarters we have the most encouraging advices. In many places the fall wheat is in ear. Our market has been quiet this week; a dullness in the English markets, and the large arrivals of Western wheat and flour in Montreal, have checked that active demand that we have had of late so often to chronicle. Fall wheat has kept up to last week's prices. The demand for spring is slow, but with such small stocks, a prejudice against Western wheat flour, and four months' consumption before us, there is not much to fear. Flour has been dull and lower. The warm weather, and consequent danger of souring, make buyers chary about operating. Wool has been in active demand at gradually advancing prices; market closes firm.

Flour market dull with few transactions. No. 1 superfine at \$5 20 to \$5 50 per bushel; extra, \$5 75 to \$6 00, superior extra, at \$6 50; fancy, nominal.

Fall Wheat steady, at \$1 15 to \$1 20, according to quality. Sale of 5,000 bushels is quoted equal to \$1 34.

Spring Wheat—Not much doing, at \$1 10 to \$1 12 per bushel on the street.

Barley quiet and unchanged, at 55c to 65c per bushel.

Oats at 45c to 50c per bushel, from teams and in store.

Rye 60c per bushel.

Peas dull, nothing doing, at 75c to 80c per bushel.

Wool has been in active request, with moderate receipts; prices varying from 42c, 43c to 43 1/2c, according to quality.

Provisions—Butter in large supply, at 14c to 15c per lb. for rolls; dairy, in tubs, 10c to 12c per lb.; re-packed 8c to 12c per lb.

Cheese—very scarce; wholesale 12c to 13c per lb.; retail 14c to 15c per lb.

Eggs—good supply, 12c to 13c per dozen.

Potatoes—in good supply; wholesale 40c to 45c per bushel.

Beef—in good demand; prime cuts 12c to 15c per lb.

Mutton—in small supply; 11c to 12c per lb.

Pork—market firm; very little offering and of ordinary quality, from \$6 50 to \$7 50 per 100 lbs.

Live Stock—1st class cattle from \$5 50 to \$5 75 per 100 lbs., live weight; 2nd class, \$3 50 to \$4; inferior, \$2 75 to \$3 25; dressed weight, 1st class, \$4 50 to \$7; 2nd class, \$5 50 to \$6; inferior, \$4 to \$5; calves, \$4 to \$6 each; large quantity in the market; sheep, \$4 to \$5 each per car load; do. yearlings, \$3 to \$3 50; lambs, \$2 to \$3 50.

Hay—unchanged, with fair supply at from \$12 to \$16 per ton.

Hides—\$2 50 to \$3 per 100 lbs.; trimmed, \$3 to \$3 50.

Sheepskins—dull, from \$1 to \$1 50.

Montreal Markets—June 10—Flour—Receipts 1,860 bbls.; very little doing; quotations about normal, considerable Western wheat flour pressing for sale at \$4.00; inspected coarse flour dull and lower Wheat—Chicago nominally \$1.10 sales firm No transactions. Aches unchanged Pork quiet, new inspected mutton at \$20.50 to \$21.

Hamilton Markets, June 10, 1865.—Wheat, per bush, \$1.05 to \$1.20; Flour, per bush, \$5.50 to \$6.50; Barley, per bush, 55 cts. to 60 cts.; Peas, per bush, 75 cts. to 80 cts.; Potatoes, per bush, 38 cts. to 40 cts.; Oats, per bush, 48 cts. to 50 cts.; Beef, per 100 lbs., \$4.00 to \$5.00; Butter, per lb., 16 to 20 cts.; Pork, per 100 lbs., \$6.50 to \$7.00; Indian Corn, per bush, 65 to 70 cts.; Eggs, per doz., 10 to 12 cts.; Hay, per ton, \$10.00 to \$13.00; Wood, per lb., 42 to 43 cts.

London Markets, June 7—Fall Wheat, per bushel \$1.05 to \$1.12; Spring Wheat, do, \$1 to \$1.05; Barley, do., 55c. Oats, do., 38c to 40c; Butter, fresh, per lb., 14c to 15c; Butter, key per lb., 12c; Potatoes, per bushel, 1.00; Wool, per lb., 40c to 44c; Flour, per 100 lbs., \$2 to \$2.50; Apples, per bushel, \$1 to \$1.50; Old Sides, per load, \$3 to \$5; Dressed Hogs, per cwt., 50 to 57; Beef, per cwt., \$3.50 to \$4.25; Peas, do, 75c; Corn, do., 60 lbs., 75c to 80c; Hay, per ton, \$12 to \$15; Eggs, per dozen 10 to 10c; Hides, dry, per lb., 6c to 7c; Hides, green, 3c; Sheepskins, fresh off, 75c to \$1.75; Calfskins, per lb., green, 8c to 9c; Calfskins, do., dry, 12c to 14c.

Dunnville Markets, June 10—Butter, per lb., 12 1/2 cts.; Eggs, per doz., 10 cts.; Flour, per 100 lbs., \$2.75; Corn Meal, per 100 lbs., \$2.00; Potatoes, per bush, 67 cts.; Oats, per bush, 45 cts.; Hay, per ton, \$12; Wool, per lb., 40 cts.

Bellefleur Markets, June 8—Fall Wheat, firm, at \$1.20; Spring Wheat, in demand at \$1.10 to \$1.15; Barley, 60c to 65c; Peas, 90c to 95c; Oats, in demand at 52c to 55c; Rye, 65c to 70c; Corn, no one in market; Buckwheat, 50c to 55c; Bran, \$1.10 per 100 lbs.; Flour, \$5.50 per bbl.; Shorts, in demand; Potash, \$4.75; Beef still continues scarce, No 1 commands \$7 to 8; Pork, no one; Veal, 5c to 6c; Mutton, 9c to 10c; Live Hogs, in demand at \$5, per 100 lbs., live weight; Live Cattle sell rapidly at \$4 to \$4 1/2, per 100 lbs., live weight; Hay has declined to \$10 a \$12 per ton; Straw, none; Potatoes, 6c to 7c; Apples, \$1.50; Butter has declined to 12c a 13c; Tallow, 6 1/2c; Lard, 11c; Eggs, 9c to 10c; Hides, firm at \$2 1/2; Alths, \$1 to \$1 75; Calfskins, 7c to 8c; Deacons, 50c each; Wool, the market was active during the early part of the week, at 43c to 44c, but has since declined to 40c, with a downward tendency.

Buffalo Markets, June 12—Flour—in moderately active demand, Canada and Wisconsin bakers' at \$7, xx white at \$8 to \$8.50, gray lots, mixed brands at \$8 to \$9.50, according to quality; Wheat, unsettled and dull; No 1 Chicago spring held at \$1.25 to \$1.50; offers of \$1.20 refused; amber Michigan, \$1.60, red winter, \$1.45 to \$1.50; white Kentucky, \$2.00 to \$2.10; Corn, little offering; No 1 mixed Western, 69c; Oats, market dull at 54c; bagged at 57c; Rye, light supply; small sales at 75c; Barley, quiet; nominally quoted at 75c for Western, and \$1 for Canada; Peas, nominal at \$1.30; Beans, dull at \$1.25; Butter, quiet; fair to choice State and Canada, 20c to 22c; comm n Canada and West n, 15c to 18c.—Daily Courier.

New York Markets—June 10—Flour—Receipts 1,825 bbls., market 5c to 10c better; sales 7,000 bbls., at \$5.65 to \$6.15 for Super State, \$6.80 to \$6.95 for extra State; \$7 to \$7.10 for choice do; \$6 to \$6.40 for super Western; \$6.95 to \$7.25 for common to medium extra Western; \$6.65 to \$7.25 for common to good shipping brands extra round hoop Ohio; Canadian flour firm and 5c better; sales 400 bbls., \$6.65 to \$6.65 for common; \$6.70 to \$6.70 for good to choice extra; Byo flour dull; Wheat—Receipts 13,900 bush, market a shade better; sales 7,000 bush; Milwaukee Club at \$1.40; Rye quiet; Barley dull; Corn receipts 3,042 bush, market dull; sales 4,000 bush, at \$1 to \$1.20 for yellow; Oats 1c to 2c better, at 7c for Western; Provisions—Pork higher, sales 600 bbls., \$24 to \$25 for new mess; \$21.75 to \$22 for '63 and '64, and \$23 for prime Beef steady.

Advertisements.

ROOT SEED SOWER. AND Manure and Plaster Distributor.

THE Subscriber has obtained a patent for the above Machine, which he desires to introduce to the notice of the Farming community. It will sow, and evenly distribute all kinds of root seeds, in any required proportions. It will at the same time distribute manure or plaster, in any required quantity. It will sow and distribute the seed with or without any manure or plaster. It will distribute, without injury, plaster or ashes over plants when they come through the ground. It will sow double or single—two rows, or one at a time. It can be worked by manual labour, or by horse power. It is the most complete article of the kind, and one of the greatest LABOUR-SAVING INVENTIONS yet brought under public notice. Patent Rights for Counties and Townships for sale. Applications to be made to JAMES CLAYTON, Farming Implement Manufacturer, &c. Whitby, April 15th, 1865.

YORKSHIRE PIGS FOR SALE.

I SELECTED a young Sow from those advertised in THE CANADA FARMER, No 8, vol 1, and put her to C. A. Jordison's Boar, imported last summer from England. The result is, I have a few beautiful pigs for sale. Pigs dropped the 8th ultimo. Large breed. E. B. Read, of Smith's Falls, bought of me last season, one pair advertised as above, and writes me in September, that they are doing well. I think they would be hard to beat. I never saw two finer pigs and it is acknowledged by all that see them. Every word you said about the quality is true to the very letter. For other information, address P. W. MERRITT, Belleville, C. W. June 15, 1865

1865. 1865.

NOTICE.

THIS YEAR'S IMMIGRATION.

IMMIGRANTS of the classes so much needed in Canada, Domestic Servants, Mechanics, Farm Laborers, &c., are now beginning to arrive and may shortly be looked for in increasing numbers. It would therefore be very desirable that parties in Canada wanting any of the above classes, should signify their wishes (the kind of person wanted, wages, &c., &c., and the best mode of reaching the applicant), and address any of the following Government Immigration Agents:—

- HAMILTON, . . . R. H. RAE.
TORONTO, . . . J. A. DONALDSON.
KINGSTON, . . . J. McPHERSON.
OTTAWA, . . . W. J. WILLS.
MONTREAL, . . . J. H. DALEY.
QUEBEC, . . . A. C. BUCHANAN, Chief Agent.

A record of such applications will be kept, and no pains spared by the various Officers of the Department to supply all wants. Proprietors or Agents having improved farms or lands for sale or lease are invited to forward printed descriptions of same for the free inspection of immigrants and distribution. A. C. BUCHANAN, Chief Agent. GOVERNMENT IMMIGRATION OFFICE, Quebec, 1st April, 1865.

SUPPORT HOME MANUFACTURES!

The Farmers of the Counties of Huron, Bruce, Perth, and Grey, will find the best Threshing Machines, Reaping and Mowing Machines, and Agricultural Implements generally at the Foundry of GLASGOW, McPHERSON & Co., Clinton, C. W.

The Farmers of the Counties of Elgin, Middlesex, Lambton, Kent, and Essex, will find the best Threshing Machines, Reaping and Mowing Machines, and Agricultural Implements generally, at the Foundry of MACPHERSON, GLASGOW & Co., Fingal, C. W.

Farmers should bear in mind in getting Repairs for Machines purchased from a distance; that they frequently incur extra expense, delay, and vexation. The Kirby, Harvester, Ball's Ohio, and Victoria Reaper and Mowers, at either of the Foundries.

SOMETHING NEW UNDER THE SUN! ALSO IN CANADA.

IMPORTANT TO CHEESE MAKERS. The undersigned is prepared to fill any amount of orders for CHEESE BOXES and NETTERS, at a very low rate. All orders will be strictly attended to. ADAM OLIVER. Ingersoll, March 24, 1864

PURE BRED DURHAM BULLS.

I have for sale Four Durham Bulls, one two years old and three one year old. Three of the above bulls were got by the Imp-bull, Lord of Lune (16428) E. H. B. (4119) A. H. B. Lord of Lune was sired by Mr. Booth's celebrated bull, Duke of Buckingham. LONDON TOWNSHIP, } GEORGE ROBSON
June 15, 1865. } v2 2-1*

WARD'S FLAX PULLER.

MR. F. A. OLIVER, of Napanee, is Agent for the sale of patent rights. It saves at least half the usual labour of pulling flax, and affords a good opportunity for investing a small capital. v2 2-11*

FOR SALE CHEAP,

About 50 or 60 Tons of OFFAL, A large part being decomposed Bone and Screenings of Super-Phosphate—suitable for Manure, or Compost Heap.

Term Easy—One or Two Horses taken in Exchange. PETER R. LAMB & CO. Manufacturers of Ground Bones, &c. Toronto, C. W., June 13, 1865. v2 12-1†

IMPROVED FARM FOR SALE.

IN the County of Simcoe, with CROPS, STOCK, and IMPLEMENTS, the North 1/2 Lot No. 26, in the 10th Concession of Nottawasaga, 100 acres, more or less; about 80 acres Cleared and Fenced, of which 60 acres are about clear of stumps, and under crop with Wheat, Oats, Barley, Potatoes, and Hay, and the balance in Pasture. A good Stone Dwelling House, 28 x 34, and other out buildings. Also a young Orchard bearing fruit, and a good Mill site for a Carding and Fulling Mill, 7 miles from Collingwood Harbour, 1 1/2 from the Scotch Corners. The above will be sold cheap for Cash, and 7 per cent. of discount allowed; or time will be given for the one half of the purchase money. Apply by letter, Post-paid, to PETER BEVERIDGE, On the Premises, Nottawas P. O. Nottawasaga, April 15th, 1865. v2 6-1†

FARM FOR SALE.

A FARM containing 86 acres of excellent land, being part of Lot 41, in Con. 2, and part of 41 and 42 in Con. 3, Township of Ancaster, about 8 miles from Hamilton, and one from Ancaster, and on the Macadamized Road leading from Hamilton to Brantford, Stone Cottage 60 x 60, Frame Barn 125 x 35, with Cattle Sheds, Stables, and necessary out-buildings; all having recently been thoroughly repaired. A large orchard of excellent fruit trees, and never-failing springs of water. This property is in a respectable and healthy locality, the scenery unrivalled, and is known as the "HAMMERSLEY FARM." Any gentleman in search of a desirable residence should not lose the earliest opportunity of inspecting this property. Terms liberal. Apply to MOORE & DAVIS, General Agents, &c., Hamilton. v2 10-3†

LANDS FOR SALE.

TWENTY THOUSAND ACRES OF LAND, both wild and improved, and at all prices, for sale in various townships throughout Upper Canada, cheap and on easy terms. For lists and particulars, apply to the proprietor, T. D. LEDYARD, Barrister, &c., South-west cor. of King and Yonge-sts., Toronto. Toronto, March 16, 1864. \$1†

THE CANADA FARMER is printed and published on the 1st and 15th of each month, by GEORGE BROWN, Proprietor, at his Office, No. 26 and 28 King Street East, Toronto, U. C. where all communications for the paper must be addressed.

Subscription Price \$1 per annum, (POSTAGE FREE,) payable in advance. Bound volumes for 1864 may be had for \$1.30. Subscribers may either begin with No 1, receiving the back Nos. for 1864, or with the first No. for 1865. No subscriptions received for less than a year, and all commence with the first number for the respective years. CLERK will be furnished at the following rates:— TEN COPIES for NINE DOLLARS. TWENTY COPIES for SIXTEEN DOLLARS. FORTY COPIES for THIRTY DOLLARS. ONE HUNDRED COPIES for SEVENTY DOLLARS. To Agricultural Societies ordering more than 125 copies, the FARMER will be sent at SIXTY CENTS.

THE CANADA FARMER presents a first-class medium for Agricultural advertisements. Terms of advertising, 30 cents per line of space occupied—one inch space being equal to 12 lines. No advertisement charged less than \$3, being ten lines of space. Communications on Agricultural subjects are invited, addressed to "The Editor of the Canada Farmer," and all orders for the paper are to be sent to GEORGE BROWN, Proprietor and Publisher.