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TO OUR READERS.

Although we have addressed our Readers so recently, still, we might be considered as betraying indifference did we not transmit to them a few kindly words at the opening of another year.

It is the intention of the Board and the publishers, that the Journal shall henceforth be embellished and illustrated by diagrams where necessary, and we have the pleasure to present our Readers with the first, as a specimen, in the present Number. If the Agricultural and General Public should considerately extend to the Journal the desired patronage, nothing will be spared, whether as regards increase of size, variety and excellence of matter, or profnsion of embellishment, so as to place it in favourable comparison with any existing Agricultural Periodical. Of course this will be a work of time, and the realization of progressive success must, as it ought, ever to regulate expenditure. However there is every disposition on the part of the Proprietors to render it, by degrees, worthy of its Official Character as a faithful Agricultural Guide in every department.

We think it right, on an occasion like the present, to say something as to the means by which the Industrial Interests of the Country might be benefitted by the action of the Board of Agricultnre and the Agricultural Association, especially in connection with the Provincial Exhibition.

We would again suggest, that a very beneficial reform might be wrought, by providing, as nearly as may be, that the premiums should be offered and awarded to the individual who shall best illustrate the *means* by which we can raise *maximum crops* at the *least expense*, and the *principles* of producing beef *economically*. The mere fact that Mr. so and so has received the first premium for the best bull,—that Mr. so and so has received the first premium for the best wheat,—that Mr. so and so has received the first premium for the best Model Farm, and that Mr. so and so has received the first premium for the best crop of any kind, is all very well, so far as it goes. But would it not be of more importance to the Agriculturist to be informed, at same time, of the best method of realising his wishes—of the exact means employed by the successful competitors in each class, to raise and produce such superior specimens. Would it not be a real gain to him to have explained the few secrets of practice—the secrets of skill which are so apparent around him. At present he returns home as ignorant of all this as ever—he returns home as much in the dark as ever—without the acquisition of a single new principle, or new method to guide him in any department of Practical Husbandry.

Now we ask should not these Exhibitions become practical schools—superior schools of Agriculture? The statements of the Exhibitors—the awards of the Judges—and the public addresses should be the vehicles for conveying to the Agricultural Community such valuable practical information so much desiderated. At present the golden opportunity is lost to the Agricultural

Community; whereas, if such statements were carefully prepared on the ground, by a competent individual or individuals capable of arranging in systematic order the more valuable details, and at the same time thoroughly versed in practice—such a contribution to the science and practice of Agriculture, so prepared, would be of such inestimable value, as to justify fully a thorough reform in the condition and arrangement of the Premium Lists, and would be hailed as a boon by the practical Farmer—ensure an immense attendance of the Agricultural Body—and teach them to estimate their Exhibitions at their true value—regarding them as the best public educators in the practical details of improved Agriculture.—*Let Canada be the first to introduce and perfect this improved system, so very easy of practical adoption.*

We should thus have preserved a correct Record of the results of future Exhibitions—nothing having been hitherto done beyond the publishing of the Prize List.—Whereas, we could, by introducing the system above recommended, mark and chronicle the progress of improvement in every Department, and thus furnish an invaluable guide to the Agricultural Community.

We should recommend that printed questions should be handed to the Exhibitors in each Department, to be answered by them,—and that their replies should be systematized and arranged for publication in the Journal and Transactions of the Board of Agriculture.

We should also recommend that no prizes for Implements should be awarded before satisfactory trial. Expense and scarcity of labour being the great barriers in this province to good husbandry, special attention should be directed to the perfecting of harvesting and labour saving machines and Implements constructed on the best models.

It would be especially instructive if Photographic likenesses were obtained annually of all the Prize animals, and engraved on wood, to be employed in the illustration of the Journal and Transactions of the Board, and to be described at length therein. In this way, *Herd and Stud Books* could be published by the Board, without incurring any extraordinary expenditure.

Means ought to be taken to obtain contributions, to be published in the Journal and Transactions, showing the precise practical bearing of science on Agriculture, and establishing with methodical clearness the actual *money value* or appreciable gain of such knowledge to the Farmer. Now that human labour is pouring itself forth so abundantly into so many channels; when so many vast enterprises agitate our more advanced communities; when the depths of the forest are startled by the busy hand of industry, and the everlasting silence of its solitudes is awakened by the sound of the merry sleigh bell—when the continents are girdled by Railroads, and the ocean spanned by the unwearying conductor of thought and intellectual interchange,—when continent is united to continent and nation to nation by such intimate, appreciable and indissoluble ties,—when we live in such an age of industrial and commercial activity, it would ill become the Agriculturist to deny his contribution to the common fund. When we reflect on what has been done for other countries by no means so richly blessed by nature as our own—when we call to mind the scanty returns yielded to the

rude imperfect application of the Art of agriculture, should it not be an encouragement to us to engage our best energies, Mental and Physical, in aiding the development of the most ancient of arts—the most noble and comprehensive of sciences—giving the best evidence that, after all, there is true dignity in labour, and, if well directed, it can never fail to realize abounding plenty and ever increasing wealth in every country and in every community.

We would especially guard our friends, however, against making unreasonable demands on the soil ; such a course will tend to its permanent deterioration, whilst unthinking avarice will be disappointed of its aim. While over manuring produces infertile luxuriance, over cropping ensures pervading sterility. How many fine farms in this country have been ruined by the latter practice—demanding an immense outlay, and consumate skill to restore them to fecundity. A judicious system of cropping, and periodical application, of manure can alone ensure the most abundant crops from the soil and preserve, at sametime, its progressive fertility. Both should be observed at sametime by the judicious Farmer. While he exacts the utmost ratio of produce, he takes care that his property, instead of becoming depreciated, gradually, slowly, but certainly shall be gaining in its market value.

He who impoverishes his land is his own worst enemy, while he is preemminently the enemy of his country. The soil is his treasury—it will afford periodical and ample interest—but the capital stock must not be trenched on.

We would counsel a judicious rotation, and the limited growth of cereals. The surplus produce of the Country, beyond home consumption, with improved farming, will not thereby be diminished, but largely increased. And to bring this about with rapidity and certainty, we would adopt the motto of the Royal Agricultural Society of England—SCIENCE WITH PRACTICE.

In order to restore injudiciously impovirished lands, we must draw on exterior resources—we must supply artificial manures, or take to ploughing in green crops frequently. Either method, if persevered in, will be found effective.

A cheap and inestimable artificial manure will speedily be supplied to us—composed exclusively of native products. We must also have supplied to us a moderate priced, nutritious and portable cattle food, to be used in stall feeding, and such an aid will also be speedily and cheaply supplied to us—*exclusively composed of native products.*

Attention should also be directed to improved shelter for stock in winter, and to early cutting of corn and hay, so as to afford them more substantial nourishment from these sources whilst feeding.

We should support and stimulate the exertions of local agricultural societies over the length and breadth of the land—insist on detailed and ample Reports of their proceedings in order to assure ourselves of their satisfactory working—be attentive to any valuable practical suggestions proceeding from them, and making known at sametime any special local requirements.

Every encouragement should be given to Mechanical and Agricultural teaching in the country schools. In a Country like Canada, which must for so many years be dependant for her substantial prosperity on a thorough practical education

of her Agriculturists and Mechanics,—the selection of Schoolmasters and their Normal Education should be conducted with an intelligent understanding of the responsible duties with which they are about to be charged. But with this practical teaching every care should be taken to unfold to their pupils with judgement, the higher enjoyments of superior mental culture—in order permanently to elevate their tone of feeling and appreciation of useful knowledge—teaching that the honour and reputation of nations must ever centre in the intelligence and virtue of her citizens, and that it becomes the duty of her Rulers to make wise provision for their conservation.

Our antecedants, our memories, our traditions conspire to stimulate us to this gracious task, and to take care that the National character shall be moulded after the most approved Models—in order that, when the appointed period shall have arrived, we may be the better fitted to accomplish the high destinies, and compass the lofty objects which await the legitimate action of a commendable ambition.

We have fruitful lands and busy workshops to depend on. Let us adopt the course best suited to lay acre to improved acre—product to product—to increase and flourish in reputation and in wealth—thus tempting to our shores a teeming and select emigration, to add to our abounding strength and fertilize our forests.

We shall recur to this subject very frequently—as we do not think a portion of our space could be better appropriated.

In the meantime, heartily and sincerely wishing our Readers all the felicitations, compliments and enjoyments of this happy season, we shall, for the present bid them adieu. J. A.

Grazier and Breeder.

THE FEEDING OF HORNED AND POLLED CATTLE, AND THE PRODUCTION (OR MANUFACTURE) OF BUTCHERS MEAT.

The action of the digestive organs of animals on the food they eat and the appropriation of the available constituents for the nutrition and growth of the system, are now much better understood than heretofore. The *Mammalia* or quadrupeds—are subdivided into two classes—the ruminants with a compound stomach—and the other with simple stomachs. The Ox, the sheep, and goat have compound stomachs—the ass, the mule, the pig, the dog, the cat, have simple stomachs. The Birds or Bipeds are also divided into two classes, the land and water birds. The common Fowl, the Turkey, the Guinea Fowl, the Peacock belong to the former—the Duck, Goose, &c., to the latter. However, these fowls may differ in external appearance, their digestive organs are similar, indicating an adaption to similar kinds of food.

The parts of their digestive organs are as follows viz : the *œsophogus*, or meat pipe to convey the masticated food, mixed with *saliva*,—from the mouth to the

stomach to receive and digest the food, by means of the gastric fluid exuded from its coats, supposed to be nothing more than *hydrocloric acid.* (We may here mention, that it is our intention, having received a pressing invitation to do so from a high quarter, to give a course of public Lectures, explaining the secrets of our personal practice in the production of animal substances without the agency of vitality, to which our attention was long and perseveringly directed—until lately held to be an utter impossibility.) However, we may mention, that though an acid makes its appearance on the introduction of food into the stomach, it is still a point of contention whether this acid takes any part in the solution, or digestion of the food. But in this popular work, intended for all, I shall not enter on scientific details, which would be rather repellent than attractive to the majority. The *duodenum* is the commencement of the small intestines, and receives the food from the stomach in the form of *chyle* through the pyloric duct. In its passage through the *duodenum* , the food receives the *pancreatic juice* from the duct connected with the *pancreas* or *sweetbread.* Here these fluids become changed into *chyle*—the pancreatic juice converting one portion into a white, thick, milky fluid, and the *bile* into a yellow pultaceous mass. The next intestine, the *jejunum,* conveys the food thus reduced inward,—acts upon it,—retains it a *short* time only,—and on this account is called the *empty gut.* There is little differenee between this intestine and the next called the *Ileum.* Both these intestines are much convoluted, for the purpose of detaining the food in its progress a sufficient time to permit the absorbents connected with the *mysentery,* to extract the nutritious portions from the unnutritions, and carry it into the circulating system, for distribution over every portion of the animal system. The *ileum* terminates in the *blind gut* or *cæcum,* passing through a *valve* which prevents the return of the contents. The *cæcum and colon,* large intestines, serve as a store-house for all the food which is of no use to the system, generally known as *dung or fæces* but a portion of the absorbents extend their vessels, into these even, that as much nourishment as possible may be extracted from the food before it leaves the body. The *rectum* or *straight gut* forms the *terminus* of the *abdominal viscera* to receive the *fæces* before expulsion by *anus.* The *duodenam* and *rectum* are both straight, because it is not necessary that their contents should remain long in them.

As we wish our Readers to understand thoroughly the feeding of the domestic animals, and the *modus operandi,*—the proper method—and the reasons for it, they will excuse us, and bear with us, and not accuse us of being tiresome as we *begin from the beginning.*

The compound stomachs of *cattle and sheep*—the entire system of the ruminants—is divided into four compartments—the first being the termination of the *æsophagus,* and is termed the *rumen, ventriculus,* or *paunch.* This large and roomy—occupies nearly three-fourths of the abdominal cavity and is divided into four unequal sacks by the duplicature, folding, or doubbling of the coats of the *Rumen.* The food when first swallowed goes into the *Rumen* for rumination or maceration—it still remaining without alteration with a great portion of the fluids swallowed. This is accomplished by lubrication with *mucous* and *trituration* by the *papillæ* on its interior surface. The food next passes into the second stomach, or *Reticulum,* which is provided with a *honey comb surface,* which acts by rolling the food into pellets, to prepare it to be returned through the *gullet* to the mouth for *remastication.* Having a special office to perform, it is *comparatively small* and *ovoidal,* or *oval shaped.* The *æsophogus* of *Ruminants* we would particularly remark, does not terminate in the first stomach it reaches, but extends through the series of four, its interior lining forming their roofs—so that, at the will of the animal, the food swallowed may enter the third or fourth stomach, without a particle of it entering the first

or second, as is the case with the food after it has undergone the process of *rumination*, or *remastication* as above described. The *third stomach* is also *ovoidal* or *oval shaped*, and is called the *manyplies*, being *plies* or *folds* covered with *papillæ*, with a *horny substance* extending along the margin, to aid in macerating the reduced food more perfectly before its reception into the fourth, *last* or *true stomach*, or *abomasum*, which is of *elongated form*, with *villous covering*, adapted to afford an ample supply of the *gastric juice* for the completion of the digestive process. The *smaller* and *larger intestines* of ruminants in no way differ from those of a Horse and Pig—having the same functions to perform. We shall notice any special distinction in treating of the feeding of the different classes *seriatim* (in succession.)

During the important process of rumination, the Cow is generally found couching on her *left* side, in order that the intestines, principally lodged on that side, may not press upon, or interfere with the action of the *Rumen*. After a pellet has undergone the process of *rumination* and is swallowed, there is a pause of two or three seconds, during which time the cow is making a slow and deep inspiration. By this means the *lungs* are inflated and press on the *diaphragm*, and the *diaphragm* presses on the *rumen* and *reticulum* and assist their action. The inspiration is suddenly cut short by an evident spasm ; it is the forcible ejection of the pellet from the *reticulum*, and of a fresh quantity of food from the *rumen* over the valvular fold, to enter the *reticulum* so soon as it expands again. The spasmodic action is evidently followed by the passage up the *œsoophogus* of the *ball* or *pellet* to the *mouth*. No portion of the food is returned for *rumination* in less than 14 hours—the average period is 16 or 18 hours, and any hard fibrous substances are not returned for 30 hours. In the Ox each *pellet* receives 30 to 40 motions of the mouth and jaws. In sheep a great many more. *In the feeding of all ruminants it should be borne steadily in mind, that to give exercise to the Rumen, it is absolutely necessary to serve at least a portion of their food in such an unprepared state, that it shall enter the Rumen, and undergo rumination before being carried into the last stomach ;* and that dry fodder or cut chaff should therefore be mixed with other more nutritious food for this purpose. The paunch is of little use to the *Calf* while it is supported wholly on milk, as this *liquid* finds its way at once to the *last stomach*, and is easily digested.

It is but too true, that the farm management of our Domesticated Animals is, in too many cases, a comparatively neglected branch,—left too much to chance —conducted on no fixed principles—pursued as if in defiance of the rules of common sense. But we trust that Farmers will, by degrees, be brought to see, by repeated trials, how much they have been, hitherto, standing in their own ight.

The introduction of new and improved Breeds should tend to direct more than ordinary attention to this branch of Farm Economy, and the facilities of conveyance, multiplying throughout the Country, ought to be a further inducement to Breeders and Feeders in the more remote districts to bestir themselves, seeing that facilities of transport place them in a very different position to that occupied by them heretofore. A few hours serve to convey stock,—live or dead, from one end of the country to the other, so that tedious journeys are avoided in bringing pro luce to market; and farmer and grazier can now advantage themselves of the general commercial principle of quick returns. They should advantage themselves of the benefit of judicions crossing, changing the natural characteristics of the older and more slowly maturing Breeds by commingling their blood with those Breeds remarkable for early fattening. The rearing and feeding of Domesticated Animals should now assume its merited importance, and

we feel persuaded that whatever can extend the knowledge of correct practice will be acceptable to every enlightened enquirer.

Horned and Polled Cattle.

Calves.—The treatment of Calves after birth is not uniform. Some at once remove the Calf and rub it dry with straw ; others allow the Cow to lick it over, that the *mucous* may be thereby removed, and it is then placed into the crib to be hand-fed—while some permit the calf to suckle during a fortnight, and others permit the calf to follow the dam in the pasture or meadow. Our own practice, with the more improved Breeds, was to remove the calf at once ; with the *Highland or small black, horned* to allow the calf to follow the dam to the pasture.

When removed, *according to the most approved practice*, the calves are placed in a sparred crib about four feet square, with free access to the light—divisions &c., about four feet or four and a half feet high—each provided with a small manger and hay rack. Great cleanliness should be practised in every respect.

The milk of the cow after calving is different from what it is in its ordinary state, containing much more *casum* or *cheesy* matter. It is peculiarly adapted by nature for the nurture of the young animal—preventing undue costiveness —and, with due attention, will preclude the necessity for any auxiliaries. It is first fed three times a day—receiving as much as it can drink for the first three or four weeks at least, and,until weaned, it oughtto be its chief support, the curd serving to form the muscles—the butter the fat—the phosphates to build up the bones, and the sugar to feed the respiration. All is supplied in the food provided by nature. After a while a few pieces of oilcake, or other suitable artificicial food should be placed in the little manger—afterwards some sweet hay and sliced swedes or other turnips or roots, withdrawing the midday allowance of milk —giving it only night and morning. At six weeks old, it ought to be permitted to move about freely, to encourage its muscular development. An open dry and sheltered yard is best for the purpose. Lumps of chalk ought to be placed in the manger to prevent looseness after they have been nibbling root-food. There is much more fear of stinting young stock than overfeeding them. If a calf is worth rearing, great pains should be taken to start it well at first. Ill fed calves have generally a misgrown appearance, and are much more subject to disease in every form. The great object in the Improved Breeds is to take advantage of their disposition to early maturity ; so that by illeberal stinting you are defeating your object, and losing the principal advantage arising from the introduction of improved stock. This is particularly the case with Breeds intended for the Butcher, and the food therefore ought to be of a more nourishing description than would be otherwise necessary. But in all cases care should be taken not, by stinting, to sacrifice vigour of consiitution to over-fineness of bone. If it should be necessary, from unavoidable causes, to lessen the quantity of milk, the deficit should be supplied, with the most nourishing artificial food—Linseed jelly and cake prepared by boiling crushed linseed or cake, and mixing it with warm water to bring it to milk heat, and then mixing the allowance of both together. Some add bean, pea, barley, or corn meal, before pouring on, or during the pouring on of the hot water, stirring in all the time of pouring on. Thirty quarts of boilng water are poured on three quarts of linseed and four quarts of meal, and all then close closed up; and at the end of 24 hours this is added to 31 more quartsof boiling water in the pie, being poured in slowly to prevent lumps, and being well stirred with a flat board, perforated with holes to favour perfect intermixture. It is fit for use after 35 minutes boiling and stirring, and may be given blood warm to calves at three days old, in equal portions with new milk, increasing to two-thirds, and substituing skim milk as the calf gets older, say a month—and feed-

ing on mucilage alone after six weeks. Some think it better to give them mucilage to the cows to increase their flow of milk, keeping the calves to their natural nutriment.

Sago may be prepared in the same way as *bruised linseed* ; but, without milk, it is a food very ill-suited for calves, as it is destitute of the ingredients of *muscle and bone*. A much better auxiliary is *Pea Meal*, boiled and made into thin *porridge or brose*, as it is called in Scotland, stirabout—and boiled until it becomes gelatinous in cooling, and mixed with an equal portion of new milk, till it becomes free from lumps and homogeneous—or thoroughly mixed, and of a consistence which the calf can easily drink up.

In rearing, it is quite common for one cow to suckle two calves,—the farmer purchasing in the second wherever he can find it. In feeding for veal one cows milk is sometimes insufficient for one calf, when its allowance must be supplemented by borrowing from the other cows of the herd, or by mixing artificial food with the milk of the mother. Hay tea is frequently given to calves, and mixed with their other feeding substances.

We shall from time to time give receipts for feeding for calves and young stock. In the meantime we must progress with our subject.

House fed calves must be gradually accustomed to be turned out on a paddock previous to being weaned, for a few hours a day only at first, in fine weather, and their daily allowance of artificial feeding must not he witheld, as their condition, should go on improving without check. Some rear their calves in yards, well sheltered, littered, and perfectly dry, on cut vetches, clover, rape, indian corn, &c., &c., &c.

Veal calves should be put into in small cribs, so small as to give scarce room for turning, and kept in the dark to promote speedy fattening. Food should be supplied in unlimited quantity—to satiety ; chalk being always supplied as before. Frequent bleeding and abundant supplies of barley, and indian meal, and fresh eggs are employed by some for 6 to 10 weeks—when the process should be completed.

It is the practice with many when the calves are 3 or 4 months old, according to the supply of nourishing feeding, and the forwardness of the grass to receive them, to have them weaned one after the other according to their strength and promise, giving them sweet clover, hay, and sliced turnips and carrots,—and they should be turned when weaning into a pasture or paddock—with a full bite of grass—as the milk is withdrawn from them. Otherwise they will materially suffer in condition and experience a check in growth.

We shall continue this subject, following the treatment of this class to maturity ; and take the other classes of domestic animals in succession, one after the other.

THE PROBABLE YIELD OF THE LAST HARVEST,

Bureau of Agriculture and Statistics,
October 16, 1858.

Sir,—Having received one hundred returns from Municipalities and from private individuals, many of whom state that they have consulted other parties likely to give correct and truthful information, with regard to the probable yield of the crops of 1858, I am desirous of laying the result before the public, as it may be important to know what we are to expect with regard to the probable supply of grain, &c., in our markets this season, and thence the probable export as compared with other seasons.

The hundred returns are the united opinions of about five hundred of the most intelligent farmers, and have all the appearance of truthfulness.

They comprise fourteen from Lower-Canada, and eighty six from Upper Canada from thirty six counties. Seven Lower Canada and three Upper Canada returns report that no winter wheat or very little is grown.

The average growth of the thirty-six winter wheat growing counties is only twelve bushels. That of forty-six spring growing counties is 13½ bushels per acre.

Taking the average of winter wheat at 18 bushels per acre, the deficiency of this year's crop will be 33 1-3d per cent: and taking the average of spring wheat 16 bushels per acre, the deficiency will be about 15 per cent.

The acreable extent of winter wheat is probably one-third greater than that of spring wheat, but this year's experience will diminish the extent of winter wheat and extend that of spring wheat, particularly that of the species called "Fife" or Glasgow wheat, which nearly all the returns represent as entirely free from rust, and very nearly free from midge, and especially so when in April or after the 24th of May, either very early or very late.

The winter wheat called Mediterranean is also stated by four parties to be entirely free from rust or midge, and this is corroborated by several writers in the *Country Gentleman* and other New York papers.

The opinion as to its quality in other respects varies very materially. It is not universally recommended, but has some warm advocates as a prolific wheat. Had the Fife wheat been universally sown the crops of spring wheat would have been a full average.

When it is considered that winter wheat or summer fallows requires the occupation of the land two years and spring wheat only one, the farmer will probably endeavour to adapt his system to the cultivation of spring wheat, where naked summer fallow can be dispensed with, and this year's experience is very much in favor of spring wheat.

The breadth of winter wheat already sown, is much diminished, but what is growing has been generally sown very early, and has a most flourishing and luxuriant appearance.

Three Counties of Lower Canada, Two Mountains, Argenteuil and Pontiac have reported the successful growth of winter wheat—two having reported 20 bushels per acre and the other (Argenteuil) 16. The Counties in Upper Canada which have reported freedom from the midge are Stormont, Carleton, Grenville, Lanark, Russell, Renfrew, North Simcoe, Grey and Bruce. The new townships of Addington and North Hastings, Peterborough and Victoria are also free.

Stormont returns 30 bushels per acre, Carleton 28, Russell 27, Renfrew 22, Simcoe 21.

The insect does not appear to have reached the cultivated lands in the north, although it has reached the extreme west, having travelled regularly from the east. It is to be hoped that it has left the eastern townships of Upper Canada. It is still to be found in every county along the lake shore, from Frontenac west to Essex, Lambton and Huron. The farmers to the north will probably have it next season, and they and all others should provide against its ravages, by sowing very early and having their land well drained and cultivated, so as to encourage early maturity, in order that the vegetable life may have the start of the animal life; or else, if need be, very late, so that the wheat may not blossom till the midge shall have assumed the grub state, say after the 24th of June.

To avoid rust, which has this year been nearly as destructive as the midge, the Fife or Glasgow spring wheat should be sown. About 60 of the returns state that no rust affected this sort of wheat, and no returns state that it did.

With regard to other crops, rye, barley, oats and peas appear to be full average crops, with very few exceptions. About ten report failure of the oat crop from rust and wet, and partial failure of the rye crop from the midge, which they assert has attacked that crop, and in some cases barley as well as the wheat, and the cause of rust is universally attributed to be want of proper drainage and of free circulation of air. Two returns from Essex, two from Kent, two from Frontenac, two from Middlesex, one from Northumberland, and one from Elgin report almost a total failure in the oat crop, in all cases attributed to rust. With these exceptions, the crop is reportod nearly an average of about 30 bushels per acre.

With regard to Potatoes, the returns are by no means favorable as to quantity, although very much as to quality. Almost all report a deficient crop from various causes. Twenty-nine attribute the deficiency to drought or to wet weather at the time of planting; seventeen to the common rot; forty-two state distinctly that there is no rot, and twelve have made no report. In parts of Northumberland, Durham, York and Leeds the grasshopper has done very serious injury to the Potato crop, as well as to Clover, Wheat, &c. The general average given in the returns is 112 bushels per acre. Taking the average at 150 bushels, of 56 lbs., the crop is about 33 1-3d per cent. deficient in quantity, but the excellence of the quality will in some degree compensate for that. In the new townships, on the Free Grant Roads, it is well worthy of remark that the rot has not affected the potatoes in the slightest degree, and the crop is generally excellent both in quantity and quality. The grain crops also in these localities bear the same character for excellence.

The inferences I would draw from these hundred returns are:

1st.—That the whole wheat crop of Canada for 1858, including both winter and spring wheat is about 25 per cent. below the general yearly average, allowing for the good quality of the spring wheat and winter wheat which have escaped the midge, and rust, the samples of both being excellent.

2nd.—That the crops of rye, barley and oats are about a fair average, notwithstanding the partial failure of the last named.

3rd.—That the pea crop is a little beyond the average, say ten per cent.

4th.—That the potato crop is about 25 per cent. deficient, allowing for the excellent quality, which is above par.

5th.—That the Indian corn crop has been much less cultivated than usual, owing to the planting season being extremely wet, and that there will be a very small surplus of this grain beyond what will be required for domestic purposes, forty-seven returns having reported that there is little or none grown this season.

If these deductions are correct there is a slight improvement upon last year's crop of wheat, which was 31 per cent. short of the general yearly average, this year's deficiency being calculated at 25 per cent. The potato crop also is better than that of last year, which is an item of considerable importance in the year's supply of food.

I am Sir,

Your most obedient Servant,

WILLIAM HUTTON,

Secretary.

MANUFACTURED FOODS FOR CATTLE.

In the leading article of a late Number of "The Journal," and in the address circulated on the grounds at last Exhibition, and elsewhere, we have expressed ourselves strongly on the importance of supplementing our provender for stock *during our long winter*,—with cheap Manufactured Food. We may announce an immediate prospect of our having this evident *deficit* cheaply and abundantly supplied on the American Continent. The other great *deficit*, a cheap portable Manure, to restore to fruitfulness, our soils impoverished by over cropping, will also be placed within the reach of our Readers, and the American Public; and arrangements are now making for its production on a very large scale. This artificial manure will not only supply our own wants, but will become a valuable article of export to European Countries,—where the large price of Guano, and, as may be looked for, a limited, and, it may be, a fast failing supply, independently of the intrinsic value of the new fertilizer, must bring it into prominent notice and permanent use.

These two important Auxiliaries will tend to revolutionise our Canadian Agriculture in an appreciable manner, and restore exhausted soils, in choice localities, to something like what ought to have been their true value, had they been all along under judicious management. We cannot do better however, than draw the attention of our Readers to the remarks of our experienced neighbour of Upper-Canada, in the October Number of the *Canadian Agriculturist*, on Manufactured Foods for Cattle. J. A.

Among the most obvious and important improvements in modern agriculture may justly be included the superior breeding and management of live stock. It is now well understood, and in some degree generally practised, that the improved breeds of the domesticated animals of the farm, in order to sustain their excellence, necessarily require a liberal and systematic course of feeding. Hence the general introduction of root crops into arable husbandry: the cutting of hay and straw, and steaming them with turnips, carrots, linseed, &c., for the sustentation of animals. These processes have unquestionably been marked improvements; a much less amount of raw food, by mixture and artificial preparation, has been made to support and fatten cattle in a much more effectual manner than could have possibly been accomplished under the old systems of agricultural routine.

Very recently a bold step in advance has professedly been taken in England, which, if one half that has been said of it be true, it would mark quite a distinct and important era in this department of agricultural progress. Foods artificially composed, containing nutritious ingredients, it is said, in a highly concentrated state, have been offered to the farmer; and as some of these have found their way into Canada (Thorley's for instance,) our readers may not feel altogether uninterested in the subsequent remarks.

In the last part that has come to us of the *Journal of the Royal Agricultural Society of England*, a very clever paper appears from the pen of that extensive and well known experimentalist, J. H. Lawes. Esq., F. R. S., on this interesting and important subject. As we have not had the opportunity of testing any of these preparations, nor of knowing any one who has on this side the Atlantic,

we will endeavour to place in a familiar light the results at which Mr. Lawes has arrived after a careful investigation of the subject.

It would appear that the cost of these manufactured foods is from 40s. to 50s. sterling per cwt. Taking the ordinary stock foods at the current market prices in England, such as hay, linseed, and the different kinds of grain, it appears that, weight for weight, they are only a fourth or fifth of the cost of these manufactured compositions. Very undeniable evidence of their superiority when given in much smaller quantities should be required to induce the farmer extensively to employ them. The following is the result of an analysis of one of these foods, as performed in Mr. Lawes's laboratory at Rothamsted :—

Water	12,86
Nitrogenous substances	15,51
Fatty matter	6,22
Starch, Sugar, &c	55,97
Woody fibre	5,50
Mineral matter	3,94
	100,00

Now, independently of coloring matter and flavoring with cumin, anise, or other stimulating seeds in cattle medicine, which these foods frequently exhibit, the constituents stated in the above table could be readily supplied by a mixture of barley-meal, with peas, beans, and linseed, at a cost of about one-fourth of the price of the manufactured cattle food.

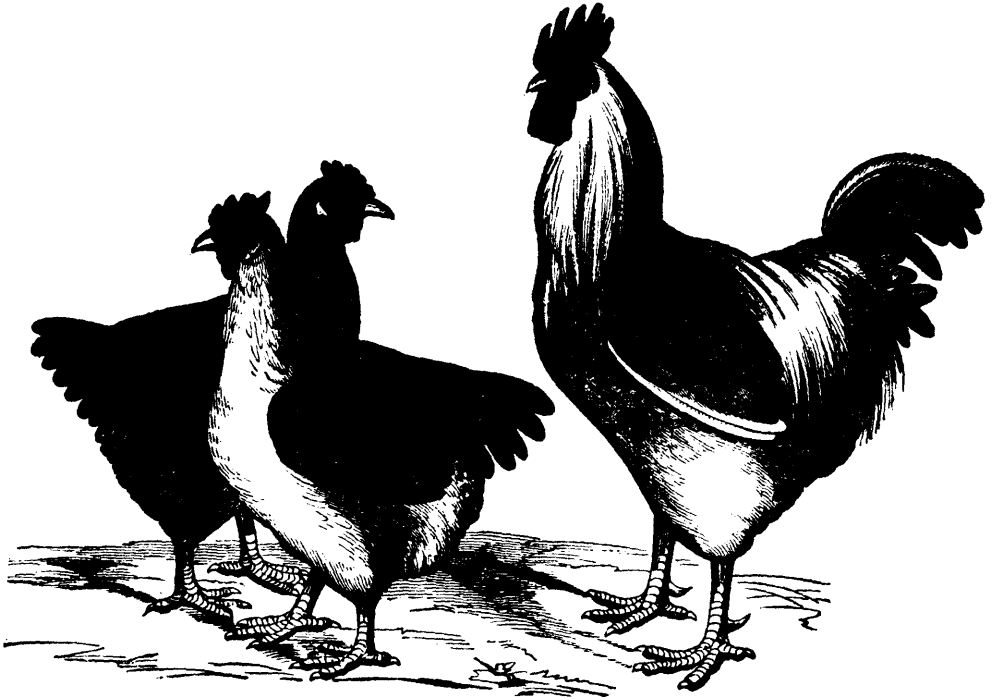
We subjoin, in a tabulated form, the results of a practical trial of the food, the proximate analysis of which is above recorded. The plan of the experiment is stated to have been as follows :—six pigs were selected and divided into two lots of three each, the collective weights of the respective lots differing from one another by only 2 lbs. The lot No. 1 a mixture was given, composed of nine parts barley-meal and one part bran. To lot No. 2. the same mixture of barley meal and bran was given, with the addition of two parts of the manufactured food to every ten parts of the barley and bran mixture. The food was in each case stirred up with hot water, and both lots were allowed as much of their respective foods as they choose to eat. The results of this comparative experiment were as follows :—

Description of Food.	No. of Pigs.	Duration of Experm't (days.)	Original Weight.	Final Weight.	Increase.	Total Food Consumed	Food consumed to produce 100 of Increase.
			lbs.	lbs.	lbs.	lbs.	
Lot 1. Nine parts Barley meal, one part Bran....	3	28	357	496	139	547	393
Lot 2. Nine parts Barley meal, one part Bran, two parts Manfactured food.	3	28	355	494	139	556	400

The amount of increase for a given quantity of food consumed was in both cases good. It is obvious, however, that so far from there being less total food consumed when the manufactured meal was employed, there was 9lbs. more of the mixture eaten when one-sixth of it consisted of the expensive manufactured food ; whilst the amount of increse in weight was exactly the same in the two cases. In fact, the results are so nearly absolutely identical that the difference cannot, perhaps, be fairly attributed to any intrinsic difference in the character of the food. But it is, at any rate, clear that nothing was gained by [adding to

PRODUCTION OF MEAT.

Short Horns.



POULTRY YARD.

the barley meal and bran one-fifth of its weight of food costing about five times as much money.

It is recommended that these foods be used in comparatively small proportion to the total food consumed; the animals thus having mainly to rely on ordinary food, the comparatively innutritious matters of which, such as bran, straw, &c., are thereby rendered palatable and nutritious. Mr. Lawes however, contends that no evidence has been brought forward to show that these manufactured foods will so stimulate digestion as either to extract more of its already existing nutritious matters, or to render the woody fibre of the coarse foods mentioned more directly serviceable to the nourishment of the animals. All kinds of live stock, especially such as are in a growing or fattening state, require, in their daily food, a given amount of digestible constituents; such as starch, sugar, pectine, gum, oil, nitrogenous compounds, &c., all of which they must obtain from their food. No condiment or highly concentrated preparations, by acting as a stimulant, can adequately supply the waste and wants of the body, caused by respiration and perspiration, the loss by urine and fœces; the gain therefore in weight of fat, flesh, bone, &c., must all come from constituents actually contained in the food.

Mr. Lawes refers to some very elaborate experiments which he made on the feeding of animals at Rothamsted several years ago,—the results of which were published in the agricultural and scientific journals of the day,—when it was clearly ascertained that the ordinary foods, when in proper admixture with one another, supplied the several constituents far more economically, than mixtures in which some of the constituents, (starch, sugar or oil, for instance) were employed in a comparatively pure state. So that unless cheaper sources of food can be discovered than exist in hay and grain, &c, we cannot hope effectually and economically to replace the latter by any special manufactured foods for stock. It has been urged by the venders of concentrated foods that, as plants are rapidly pushed on by special, stimulating manures, so can the growth of animals by the prepared foods in question. But the analogy between plants and animals in this respect does not hold good. The supply of waste and increase of bulk in animals, it has been shown, are affected by the supply of materials contained in the ordinary food supplied them; whereas the greater bulk of matter contained in the plant is not derived from any special, concentrated, stimulating manure that may be applied, but essentially consists from materials derived from the atmosphere, and such as naturally belong to the soil, and are therefore dependent only in a subordinate degree on the will or skill of man.

Mr. Lawes further observes, that the virtues which such preparations do really possess over and above those which could be secured at one-fourth or one-fifth the price, and confined to the action on the health and digestion of the animals of the small amount of stimulating and carminative seeds which they contain. In fact, so far, they are sauce or medicine, rather than food. As such they are likely rather to increase than to diminish the appetite for further nutriment. Still, it is possible that, if judiciously compounded, they may be of service in keeping horses in a more healthy state of body, or in aiding the digestive powers of weakly animals. Still it should always be borne in mind that such preparations can never supply, in the ordinary way, the proper amount of the necessary ingredient contained in ordinary food. "I feel bound to say [observes Mr. Lawes,] that I should require much clearer evidence than any that has hitherto been adduced, to satisfy me that the balance sheet of my farm would present a more satisfactory result at the end of the year were I to give to each horse, ox, sheep, and pig a daily allowance of one of these costly foods."

SHIPMENT OF LIVE STOCK FOR THE UNITED STATES.

SIR,—Having seen that the local papers have noticed a cargo that I superintended the shipment and part collection of, for America, it seems to me you would like to have authentic particulars for your journal. We sent 16 head of cattle, amongst them, from Douglass, of Athelstaneford, we had Queen of Trumps, by Captain Balco,dam bred from Booth's cow, Ringlet. This heifer has won in England, Scotland, Ireland, Dublin Society, and Londonderry. We consider her the best heifer in Great-Britain. Also, we have Sultana, and a March bull calf. The lot came to very near £600. From Captain Ball, we have Nathalie, prize heifer, Miss Goldsmith, prize heifer, and Pride of the Sea. The lot came to £300. From Turner we have Nonpareil, dam of Maid of Kilbogget, Crinoline, and Fanny, bred by LaTouche. From Major Connolly, a lot of Velvet Jacket heifers ; also, from the Major, a four year old mare, by Shawn Buidh and a very clever mare from a Rov. Father Falkner by the last of the Barons ; three Clydesdales, from Douglass—all winners in their class. The horses came to about £550. Twelve sheep—Leicester and Southdown—bought from Messrs. Roberts, Ireland, I think, and the other first prize ewes in Derry from English breeders. Four pigs from Mr. Rutherford, Mooretown, and Lord Talbot de Malahide. Twenty-four poultry from Dublin amateurs. The ship "Zered," property of Messrs. M'Corkell and Co., Londonderry, 900 tons, fitted up in the most approved style, was especially freighted for them ; and the bill of fare was, bruised oats, bran, bean meal, oatmeal seeds, and careb pods, turnips, carrots, hay, and straw for 75 days. They were all hoisted in boxes, and stand between decks. We have sent 13 people of the most efficient character we could find. In all, I think it was the best assorted cargo of live stock ever left Great Britain to improve the herds of Brother Jonathan. Their destination is New Orleans, thence three days steam up the Mississippi and Ohio Rivers to Henderson, Kentucky. Mr. Barrett is their owner, and they have been bought purely for the purpose of breeding and improving his own stock, on a farm of 3,000 acres of prairie land.—Yours, &c., Wm. F. Black, *Omagh, November 9th*, 1858.

THE LAMAS.

Apropos to the attempt to naturalize the camel in the United States, efforts have just commenced to acclimatize the lama—a native of South America—the animal from which the famous alpaca wool is obtained. Forty-two of these animals recently arrived in this city, being imported from Escuador by way of Aspinwall. They are destined, we understand, for the Eastern States, in the hope that they may become inured to the climate, and take the place of sheep, in some cases, on account of their wool, which is very valuable. In their native regions they are shorn twice every year, and yield, at each shearing, about sixteen pounds—four times the quantity obtained from the common sheep, which are shorn only once annually. They are pretty large animals, weighing from 200 to 300 lbs., and are used as beasts of burden in South America—they are the American camel. They live on coarse herbage in the region of the Andes mountains ; and it is believed they will prosper in the hilly portions of Vermont, Maine and New Hampshire. If not, we think they can be acclimatized in the mountainous regions of Virginia, North Carolina and Tennessee.

We really hope that this laudable effort to introduce the lama into our country will prove successful, as its flesh is said to be equal to the best venison, while its wool is now extensively employed in manufacturing very beautiful fabrics. We also hope that if one effort fails, others will be made, as it is reasonable to suppose that, with our great variety of climate and soil, this useful animal can be acclimated in some part of our country.—*Scientific American.*

NEW AND VALUABLE DISINFECTING AGENT.

A Dr. Angus Smith of Manchester, England, lately read a paper before the Society of Arts, London, England, in which he stated that he and a friend named McDougall, some years ago had made numerous experiments to find out a good disinfecting agent, and at last found that Sulplate of Magnesia, which is procured from Magnesian Limestone, and a certain per centage of carbonic or phenic acid, which is procured from coal tar, made a disinfecting powder of remarkable efficacy. The mode of using this powder is first to sweep the stable, then sprinkle it with the powder, the quantity being about the same as that of sand to sprinkle a floor. Then the litter is thrown over this. This powder has been found so powerful and effective, that when introduced into stables where sick and wounded army horses were, no disagreeable odor was perceptible either from the wounds or the fœces. A stable keeper, who always kept on hand a large number of horses, found that by using this powder his horses were healthier, lung diseases had disappeared or decreased, while their eyes and health did not suffer from the irritating effects of the ammonia which is to be found in all stables. It was also found that the stable was cooler, and that the dung did not decompose, so that the flies did not breed in it, and there were fewer of these pests to annoy the beasts. Mr. Murray, the stable keeper, also found that after the manure of his stadle, in which he had used this powder, had been used one year, he was offered double for it next year by the market gardeners who had purchased and used it. As Dr. Smith was not a trading man, had no interest in manufactures, and did not mean to have, his statements in relation to this matter are considered reliable and disinterested.

Farming on a Grand Scale.—Several men of wealth in New York, Buffalo and Chicago, (says the *Movement*, a new paper just started in New York,) have it in contemplation to stablish somewhere in the West, a Leviathan Farm, of from 100,000 to 200,000 acres. Their object is to do for Agriculture, by the use of combined wealth and the power of machinery, what has been done in the past half century, by the railroad and factory, to supercede the old stage-coach and the spinning-wheel. They will organize the vast tract into two rival establishments, with military organization of labour, gigantic machinery, to plow, to plant, reap and harvest—vast herds of horses, sheep and cattle, of the most select stock, and the culture of fruit and grain on a grand scale.

PULPING FOOD FOR CATTLE.

The changes that have taken place in the mode of feeding live stock within the last thirty or forty years are very instructive ; indicating in the most unmistakable manner the progress of science—more particularly chemistry and animal physiology—in its application to practical agriculture. The old practice of feeding cattle upon uncut hay and straw, and unbruised grain, has for some years been displaced by a far more rational and economical system. The chaff cutter, many years since, taught the farmer that a mixture of hay and straw cut into short lengths, was far better for horses that when these materials were supplied in the form in which they came from the field. Bruised oats, and other grain, were subsequently found to be better adapted to animals than when whole. Hence the various inventions for cracking or bruising grain by machines of different sizes, adapted to hand, horse or steam power. Of late years experience—

the result of the most carefully conducted experiments—has already shown that all kinds of cattle-food, hay, straw, grain and roots, are more nutritious, weight for weight, when finely divided and thoroughly cooked, by the simple process of steaming. The proper relative quantities of raw and cooked food is a matter upon which experience has not yet absolutely decided. A certain proportion of food thus prepared has indisputably been shown to be highly advantageous, not only to horses but also to cattle, sheep and pigs. The boiling of linseed with chopped hay, straw, turnips, &c., till reduced to a sort of jelly, has been practised for years by the best farmers in Britain, for the fattening of cattle, and the practice has been found both efficient and economical.

It is true that the rationale of practices of this nature involves some of the most difficult questions in vital chemistry and animal physiology ; and it cannot but be satisfactory to know that the more recent researches and progress made in these sciences—tend to illustrate and confirm the improved systems of breeding and feeding the domesticated animals. It would appear that the advantages of the system of finely dividing, and even cooking, the food of animals mainly consist in diminishing the force necessary for perfect mastication ; thereby rendering digestion more rapid and easy, and the material principles of the food thus become more thoroughly absorbed into the animal system. It has been clearly shown that food remains in the stomach only for a certain time when it is subjected to that powerful solvent, the gastric juice ; it is afterwards passed into the intestines when thoroughly digested portions are, by the process of absorbtion, converted into blood and muscle.

Refinements in cattle feeding have been carried still further within the last year or two by the invention of what is termed the "Pulping Machiue," which has been in use by several farmers in the old country, and we infer from the accounts that have reached us, with much satisfaction. Several of these machines were exhibited at the recent English Show at Chester, when they were subjected to a searching trial. Hitherto it has been deemed sufficient to cut roots into slices more or less fine, according to the kind of animals to be fed. By reducing however the roots into a pulp, not only is the force of mastication reduced to a minimum, but the greatest possible surface of the material is without loss of time, brought into direct contact with the gastric juice.

It may, however, in the present state of our knoweldge, fairly admit of a doubt whether there is not a rlsk of carrying the practice of pulping and cooking food too far. A certain amount of mastication must necessarily be performed by the animals, for which purpose nature has furnished it with teeth ; the pulping machine, therefore, should be regarded only as an auxiliary. According to Liebig the chief use of saliva is to absorb the oxygen of the air, which thus becomes mixed with the food and carried into the stomach, when a still further reduction is effected. Mastication, therefore, not only breaks down the food, but enables the gastric fluid to mix with it the necessary amount of oxygen, that it may be taken up by the asborbents and converted into animal tissue. In giving dry food, such as hay or straw to animals, practise has decided that such as chew the cud—the cow and sheep for example—should have it cut courser than the horse, which is non-ruminant. The act of rumination would appear to be useful, not only by subjecting the food to a second mastication but also enables it to obtain more oxygen from the air inhaled by respiration.

It may be well further to observe that although experience has already fully proved that the cooking of cattle food, and we may add, perhaps, the pulping of roots, is an advantageous practice, yet it must not be forgotten that the same experience promotes the necessitg of giving daily to animals thus fed on a certain quantity of dry fodder such as hay or straw in their usual state. This corrects,

as the farmers say, the laxity which a large amount of unmixed succulent food usually produces in the bowels of animals. Indeed, *bulk* has to be considered in regard to food and nutrition as well as quality. The stomach requires a certain amount of food, and no animal will thrive or indeed live for any great length of time on any amount of the essence of food with which it may be supplied. There is much of a curious scientific nature yet to be learnt in these matters, that will be made to have a most beneficial application to practice. And there are few questions possessing a greater money value to Canadian farmers than how to convert in the most effective and economical manner their hay, straw-grain and roots into thriving animals, and flavoury and nutritious meat.—*Editor Canadian Agriculturist.*

A Trap for Catching Sheep Killing Dogs.—Make a pen of fence rails, beginning with four, so as to have it square, and as you build it, draw in each rail as you would the sticks of a partridge trap, until your pen is of sufficient height, say five feet. In this way you will construct a pen that, when finished, will permit a dog to enter at the top at pleasure, but out of which he will find it difficult to escape, should he have the agility of an antelope. All that you have to do to catch the dog that has killed your sheep, is to construct the trap, where a dead sheep is left, as directed, as soon as possible after an attack has been made on your flock, put a part or the whole of a sheep that has been killed, in it, and remove the balance to some other field. In a majority of cases the rogue and murderer will return the succeeding night, or perhaps the next, and you will have the gratification next morning of finding him securely imprisoned. Some may object to the plan, perhaps, on the ground that you might catch an innocent dog. If so, he can content himself with not trying it. For my own part, I should pronounce the sentence of guilt on any dog caught on *my farm* within three nights after my sheep had been killed, and execute the law speedily, without any qualms of conscience.—*Southern Planter.*

Poultry Yard.

HOW TO MAKE HENS LAY IN WINTER.

Some writers on domestic poultry seem to think that there is no limit to fowls laying eggs, if they are managed and fed in a certain manner. This is fallacious, as a hen can be made to produce but about 100 to 150 eggs a year, if fed ever so well and kept ever so warm in winter. Fowls are like the soil, they must have rest, and if we keep them laying all winter, they will be about barren in the spring, when it is the season for eggs, and when they are most used. It is a good plan to keep fowls warm in winter, and to feed them with fresh meat, when it can be done cheaply : but it is not advisable to force them to lay too much.

We have been led to make these remarks, on seeing an extract from Bement's *Poulterer's Companion*, as annexed :—

To have Eggs in Winter.—The question is often asked, "Why cannot hens be made to lay as well in winter as in summer !" They can, to a certain extent ; but they require as a condition, that they be well provided with warm and comfortable lodging, clean apartments, plenty of food, pure water, gravel, lime, fine sand, and ashes to roll and battle in.

There seem naturally to be two seasons of the year when hens lay ; early in the spring, and afterwards in the summer ; indicating that if fowls were left to themselves, they would, like wild birds, produce two broods a year.

Early spring-hatched birds, if kept in a warm place and fed plentifully and attended to, will generally commence laying about Christmas, or even somewhat earlier. In cold and damp this is not to be expected, and much may, in different seasons, depend on the state of the weather and the condition of the bird.

It is a well known fact, that from November to February (the very time when we want eggs the most) they are to many a bill of expense, without any profit. To promote fecundity and great laying in the hen, it is necessary that they be well fed on grain, boiled potatoes given to them warm, and occasionnlly animal food. In the summer they get their supply of animal food in the form of worms and insects when suffered to run at large, unless their number is so great as to consume beyond the supply in their roving distance. I found it advantageous, in the summer, to open the gates occasionally, and give the fowls a run in the garden and in the field adjoining their yard, for a few hours in the day, when grass-hoppers and other insects are plenty. I had two objects in view ; one to benefit the fowls, and the other to destroy the insects. It will be found that the fecundity of hens will be increased or diminished, according to the supply of animal food furnished.

Hens moult and cast their feathers once every year, generally commencing in August and continuing till late in November. It is the approach, the duration and the consequences of this period, which put a stop to their laying. It is a critical time for all birds. All the time that it lasts, even to the time that the last feathers are replaced by new ones, till these are full grown, the wasting of nutritive juices, prepared from the food for the purpose of promoting this growth, is considerable ; and hence it is no wonder there should not remain enough in the body of the hen to cause the egg to grow.

Old hens cannot always be depended on for eggs in winter, they scarcely being in full feather before the last of December ; and then, probably may not begin to lay till march or April, producing not more than twenty or thirty eggs ; and this is probably the cause of the disappointment of those who have supplied themselves at the market with a stock to commence with, and get few or no eggs. As pullets do not moult the first year, they commence laying before the older hens, and by attending to the period of hatching eggs, may be produced during the year. An early brood of chickens, therefore, by being carefully sheltered from the cold and wet, and fed once a day on boiled patatoes, warm, with plenty of grain,and occasionally a little animal food, will begin to lay in the fall, or early in winter.

Treatement of Hens.—Here is a timely item, containing a valuable hint to poultry keepers. An uncredited paragraph in an exchange says :—"two flocks of hens were compared. One laid eggs almost all the time. The other laid scarcely any. On examining their treatment the following differences were found to exist ; the former had a warm cellar to roost in during the winter ; the latter roosted in a stable where the wind blew in. The former had a fine place in an open cellar for scratching among ashes, lime, and earth ; the later scratched in the manure heap, or in the stable where the cows were put out. The former had plenty of good water, with milk, etc. ; the others had no drink except what they could find. It can be seen, we think, why one flock laid eggs generously,and the other did not."—*Canadian Agriculturist*.

Critical Notices.

ILLUSTRATED ANNUAL REGISTER OF RURAL AFFAIRS FOR 1859. DAWSON & SON MONTREAL.

This publication has now been four years before the public, the present constituting the fifth of the Annual Numbers. We can recommend this little work to our Readers as both attractive and valuable. The numbers for 1855, 1856 and 1857 can be had, bound up in a handsome volume, and they are well worthy the attention of our numerous friends.

On the ventilation of Dwelling Houses and Schools, by Henry H. Miles, Esq. A. M. Professor of Mat. and Nat. His., University of Bishop's College, Lennoxville.

The subject of Ventilation, so important in sanatory science, is very ably treated by Professor Miles in this *brochure*, published at the request of the Sub-Committee of the Board of Arts and Manufactures of Lower-Canada—the subject having been selected by Professor Miles, who lectured before that Body in Mechanics Hall, during the winter of 1857–58. The author truly remarks, that, considerations of a purely scientific nature would of themselves suggest the need of precautions for the defense of health. But, as regards people in general, the lessons of science, especially those of Chemistry and Physiology, so much concerned in our present subject, are inculcated in vain. Sad experience, then, both in the Old World and in the New, proves in the end,to be the Chief incentive to activity in the right direction. For those who have made sanitory improvements the subject of particular study—the medical profession, statistical writers, sanitory commissioners, Boards of Health, and scientific men in General, concur in bearing testimony to the indifference with which the public at large have commonly regarded these matters. It is, as already hinted, only where some great pestilence, as the Cholera, has plainly begun to signalize its access by fatal proofs, that the feelings of people can be warmly excited in their behalf. We strongly recommend a perusal to our Readers. When we can find space, we shall give a few extracts.

Campbells' Canadian Farmer's Almanac 1859. *Ths. Campbell (successor to the late H. Ramsay) Montreal.* We have great pleasure in recommending this little work for cheapness and usefulness. It will no doubt have an extensive sale.

A general view of the Animal Kingdom by A. M. Redfield, E. B. and E. E Kellogg—New-York and Hartford.

Although we have not space on the present occasion to notice this work at length, we should be guilty of great injustice to the Authoress if we withheld a notice, however brief. This chart and accompanying work are undoubtedly well adapted to create and promote a taste for Natural History. Its accurate scientific details, careful arrangement and classification, and tasteful grouping, are well calculated to afford, at a glance, a clear and comprehensive view, both of

the classification and nomenclature of the Auimal Kingdom, according to the best authorities. It will enable the zealous student to stereotype on his memory the wide circle of the animal creation—referring each living prototype in his exploration of the field of nature to its appropriate genus and species – so that it will fall naturally into its proper place in the wondrous circle. It will be eminently useful in Public Schools, and has received, is now receiving, and will continue to receive the extensive patronage and commendation it so well deserves.

We regret we must defer, for want of space, noticing the other works on our table. J. A.

Ladies Department.

THE LETTER.

Oh! the long expected letter,
In the dear familiar hand!
Twice a thousand miles it's traversed
O'er the waters and the land,
Bring my rocking chair and scissors,
Watch the baby, close the door!
Let me have no interruptions,
Till I've read it twice, or more.

Now I warrant me, he wrote it
In a business study brown,
For the "Mrs." looks like "Messrs."
And the stamp is upside down!
Pity he's so careless—giving
All his lines an uphill turn!
Yet, I think, the sign's a good one—
Let me open it and learn.

"Your's received,"—a fair beginning;
"Health improved,"—good news indeed!
"Quite contented," that's but so-so:
"Time flies swiftly,"—Ah! I heed!
"Fishing, gunning," pooh! I warrant
When he shoots, a man will fall!
"*Cuisine charmant!*"—"pic-nics! ladies!"
Exclamation, points and all.

Really, sir, this *looks* like business
In a somewhat novel line!
In my next I'll surely tell him
Of that charming trip of mine;
Of the steamer's mirth and music,
Forfeit games, and dancing free,
And the moonlight promenading
Of the "merry companie!"

Ah! what's this? "Were you but with me;"
"Darling children—dolls and drums,"
"Paroquet with splendid feathers;"
What a Babel when he comes!
"Isle St. Mary,"—lovely sunsets,"—
There's a poet lost in him!
"Lonely Sabbaths,"—weary absence;"—
"Home, sweet home," is blurred and dim.

"Love,"—"farewell"; would it were double!
Choicest blessings crown the man
Who, inspired of good, invented
The epistolary plan!
Bless the ship, the car, the mail coach,
Bless the hands, where'er they be,
That have brought this little missive
Twice a thousand miles to me.

Blackberry Wine.—There are several processes recommended. The following is perhaps as good as any one of them: Put the berries into a coarse cloth—linen is preferable, though cotton or woolen will answer—and press out the clear juice. Add one quart of water to from three to four quarts of the juice, and also add about there pounds of good sugar. White sugar is preferable, but light brown may by used. Stir until the sugar is well dissolved and then put in a clean keg, setting in a cool place. Leave the bung open, covering it with millinet or gauze to keep out flies and other insects. Let the fermentation go on for several weeks. When the lees have all settled and the liquid becomes clear, draw it off and cork in bottles. It may be kept, without bottling, in casks, or in jugs. It should always be placed to ferment at first, in some convenient vessel for drawing it off without disturbing the lees. A cask with an end faucet is best for this.

The preceeding was put in type Aug. 2, in order to send proof slips to several inquirers desiring immediate information. We have since examined the results of our own experiments, and also conversed with others on the subject. Aug. 1857, we expressed the juice from a quantity of New Rochelle Blackberries, and put it up in three methods. Each kind was kept in glass bottles and stone jugs and left uncorked and undisturbed to this date. A piece of millinet was tied over the mouth of each vessel to keep out insects. The vessels were set on a shelf in the cellar. The juice was obtained by mashing the berries and straining trough a linen cloth.

No. 1.—One quart of blackberry juice, two quarts of water, and there lbs, of white sugar. This is now nearly a good *vinegar* with a beautiful reddish color, and strong wine flavor.

No. 2.—One quart of juice, one quart of water and two lbs. of white sugar. This is now a beautiful wine. Several gentlemen have tested it and all say it could hardly be improved.

No. 3.—One quart of juice add 2 pounds of sugar. This is now a heavy wine, of excellent quality though rather strongly flavored by the fruit. It will doubtless improve by age.

We think all the above should have been drawn off from the lees after standing six or eight months, and kept closely corked in a cool place, though Mr. Seymour who recently presented us with a fine blackberry wine, thinks the flavor improved

if anything, by letting the lees remain in the bottom of the cask. No. 2 we think the best recipe, and by referring to the article on New Rochelle Blackberry," on page 277, it will be seen that this agrees nearly with Seymour's mode of manufacture on a large scale.

Blackberry Marmalade, of quite acceptable qualities was made by adding a pound of sugar to a pound of the material left in the cloth after pressing out the blackberry juice.

LARD.—This is made from the inner or kidney-fat of the hog. It should be cut up in small proportions, and boiled down on a slow fire. Let the fat boil till all the oil is extracted ; but be careful not to let it burn. When it has ceased to make a noise, be on the watch : it is ready to strain off into clean, dry jars. The best, are the stone-jars, with covers to them : these can be bought in any of the stores : they are made in this country, or in the States. The coarse red pottery is very cheap. It is manufactured in large quantities, in many parts of the Province ; and is used in dairies, and for all kinds of household purposes.

VENISON.—They who live in the backwoods, often have venison brought in, either by their own people or by the Indian hunters, who gladly exchange it for salt-pork, or vegetables. A few hints as to the best method of dressing this meat may not be unacceptable to the Canadian settler's wife.

TO ROAST VENISON.—The best joints to roast are the haunch and the loins, which last should be cut saddle fashion, viz., both loins together.

If the deer be fat and in good season, this meat will need no other basting than the fat which runs from it ; but as it is often lean, it will be necessary to use, lard, butter, or slices of fat bacon to assist the roasting. Venison should be cooked with a brisk fire—basted often—and a little salt thrown over it : it is better not overdone. Being a meat very open in the grain and tender, it readily parts with its juices, and takes less time to roast than any other meat.

FRIED VENISON.—Cut your meat in suitable pieces : dust them with flour, and season with pepper and salt ; fry in boiling lard, or with some nice thin slices of ham and fat bacon. A little seasoning with onion in the gravy may be added, if not disagreeable. A little dust of flour in the pan, with a table-spoonful of boiling water, and a little tomato-catsup will make the gravy.

VENISON-PIE.—Season your pieces of venison with pepper and salt, a little allspice, and three or four cloves ; flour each steak as you lay it in the dish ; pour in a tea-cupful of water, and cover the dish with a nice short crust. If the meat be very lean, a few slices of ham or bacon will improve the pie.—Small balls made with crumbs of bread, chopped ham, parsley shred fine, seasoned with pepper, and made up with an egg improve the pie.

VENISON-SOUP.—The leanest and worst pieces of the deer, will make an excellent soup, if boiled down long enough. A handful of Indian rice may be put in when first set on the fire, but should be soaked in water for an hour or two, and drained and picked clean before adding it to the soup. Season the soup with onions and sweet herbs, pepper and salt.

The meat after a long cooking will be of little worth, as all the good qualities have been parted with in the soup.

CORNED VENISON.—When you have more fresh meat of this kind than you think will keep good, rub it with salt, and hang it in the root-house or dairy.

VENISON-HAM.—Make a mixture of sugar, and a very little saltpetre ; rub the haunch well with this every day, for three weeks ; hang it to smoke for three more. It is very good grated, or if dried, cut in thin shavings, as a relish with bread and butter for tea or breakfast, with salad. Jerked venison is the flesh cut in strips and dried in the open air.

ERYSIPELAS.—A correspondent of the Providence *Journal* says, that in ninety-nine cases out of every hundred, cranberries applied as a poultice will effectually cure the erysipelas. There is not an instance known where it has failed to effect a cure, when faithfully applied before the sufferer was in a dying state. Two applications generally do the work.

MONTHLY METEOROLOGICAL REPORT FOR AUGUST, 1858.

FROM OBSERVATIONS TAKEN AT ST. MARTIN, ILE JESUS, C. E., LATITUDE 45 DEGREES 32 MINUTES, LONGITUDE, 73 DEGREES, 36 MINUTES WEST, HEIGHT OVER THE LEVEL OF THE SEA 118 FEET.

BY CHS. SMALLWOOD, M. D. L. L. D.

BAROMETER.

	F	inches
Mean reading of the barometer corrected and reduced to.....	32°	29.771
Highest reading of the barometer	30°	002
Lowest reading of the barometer	29°	342
Monthly range.....	0	660

THERMOMETER.

Mean reading of the standard thermometer.....	62°	21
Hightest reading of the maximum do	97°	4
Lowest reading of the minimum do	44°	4
Monthly Range.....	53°	0
Mean of humidity.....	0°	756

Greatest intensity of the suns rays.....	108°	4
Lowest point of terrestrial radiation.....	48°	2
Amount of evaporation in inches	3	69
Rain fell on 13 days amounting to 8.656 inches it was raining 49 hours 51 minutes, accompanied by Thunder on 4 days.		
Most prevalent wind S. E.....		
Least prevalent wind N.....		
Most windy day the 5th, mean miles per hour.....	12	74
Least do do the 23 day do	0	00
Ozone was present in moderate quantity.....		
Aurora borealis visible on 1 night		

MONTREAL RETAIL MARKETS.

FRIDAY, December 31st, 1858.

	BONSECOURS.						ST. ANN'S.					
	s.	d.		s.	d.		s.	d.		s.	d.	
FLOUR.												
Country Flour, per quintal	14	0	a	15	0		0	0	a	0	0	
Oatmeal, per quintal	11	6	a	12	0		0	0	a	0	0	
Indian Meal, per quintal	0	0	a	0	0		0	0	a	0	0	
GRAIN.												
Wheat, per minot	0	0	a	0	0		0	0	a	0	0	
Oats, per minot	2	2	a	2	3		2	3	a	2	6	
Barley, per minot	3	9	a	4	0		0	0	a	0	0	
Pease, per minot	5	0	a	5	3		0	0	a	0	0	
Buckwheat, per minot	3	6	a	3	9		0	0	a	0	0	
Indian Corn, yellow	4	0	a	4	6		0	0	a	0	0	
Rye, per minot	0	0	a	0	0		0	0	a	0	0	
Flax Seed, per minot	0	0	a	0	0		0	0	a	0	0	
Timothy, per minot	0	0	a	0	0		0	0	a	0	0	
FOWLS AND GAME.												
Turkeys, (old) per couple	7	0	a	7	6		10	0	a	12	0	
Turkeys, (young) per couple	4	0	a	5	0		6	0	a	8	0	
Geese, (young) per couple	4	0	a	4	6		3	6	a	4	6	
Ducks, per couple	1	8	a	3	0		2	6	a	3	0	
Ducks, (wild) per couple	0	0	a	0	0		0	0	a	2	6	
Fowls, per couple	2	0	a	2	6		2	0	a	3	0	
Chickens, per couple	1	3	a	1	8		1	3	a	1	6	
Pigeons, (tame) per couple	1	3	a	1	6		0	0	a	0	0	
Pigeons, (wild) per dozen	3	6	a	4	0		3	6	a	4	0	
Partridges, per couple	0	0	a	0	0		0	0	a	0	0	
Woodcock, per brace	0	0	a	0	0		0	0	a	0	0	
Hares, per couple	0	0	a	0	0		0	0	a	0	0	
MEATS.												
Beef, per lb	0	4	a	0	9		0	4	a	0	8	
Pork, per lb	0	5½	a	0	6		0	6	a	0	6½	
Mutton, per quarter	6	0	a	12	0		7	0	a	12	0	
Lamb, per quarter	2	6	a	4	0		2	0	a	3	9	
Veal, per quarter	5	0	a	15	0		5	0	a	15	0	
Beef, per 100 lbs	30	0	a	45	0		30	0	a	40	0	
Pork, (fresh) per 100 lbs	30	0	a	35	0		27	6	a	30	0	
DAIRY PRODUCE.												
Butter, (fresh) per lb	0	11	a	1	0		0	11	a	1	0	
Butter, (salt) per lb	0	7½	a	0	8		0	8	a	0	9	
Cheese, per lb, skim milk	0	0	a	0	0		0	0	a	0	0	
Cheese, per lb, sweet do	0	0	a	0	0		0	0	a	0	0	
VEGETABLES.												
Beans, (American,) per minot	0	0	a	0	0		0	0	a	0	0	
Beans, (Canadian) per minot	7	6	a	8	0		0	0	a	0	0	
Potatoes, (new) per bag	3	0	a	3	9		4	0	a	5	0	
Turnips, per bag	3	0	a	4	0		0	0	a	0	0	
Onions, per bushel	0	0	a	0	0		0	0	a	0	0	
SUGAR AND HONEY.												
Sugar, Maple, per lb, (new)	0	4½	a	0	5		0	4	a	0	4½	
Honey, per lb	0	7½	a	0	0		0	7½	a	0	8	
MISCELLANEOUS.												
Lard, per lb	0	8	a	0	9		0	8	a	0	9	
Eggs, per dozen	0	11	a	1	0		0	8	a	0	9	
Halibut, per lb	0	0	a	0	0		0	0	a	0	0	
Haddock, per lb	0	4	a	0	0		0	0	a	0	0	
Apples, per barrel	10	0	a	20	0		15	0	a	20	0	
Oranges, per box	0	0	a	0	0		0	0	a	0	0	
Hides, per 100 lbs	0	0	a	0	0		0	0	a	0	0	
Tallow, per lb	0	4½	a	0	5		0	0	a	0	0	
BREAD.												
Brown Loaf	0	11	a	0	0		0	9	a	1	0	
White Loaf	0	0	a	0	0		0	9	a	0	0	