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Our New Volume.

The commencement of a new year affords the conductors of this Journal an opportunity of saying a few reasonable words in reference to both past and future.

In the first place we wish to return thanks to our subscribers and contributors; to the former we have received large accessions, while the latter have not increased in so great a ratio as we could desire. To such however, as have favoured us with communications,—and several of great value are to be found in the volume just concluded,—our warmest acknowledgements are due.

The great object of this serial is to diffuse a knowledge of the science and practice of agriculture as widely as possible, and to convey information on subjects of a cognate nature.—While the claims of horticulture and domestic economy are not lost sight of, it is intended that matters pertaining to the cultivation of crops, the breeding and fattening of animals, and in short whatever legitimately belongs to rural economy and farm management shall continue to form the principal features of the work.

It is our most earnest wish that *The Canadian Agriculturist*, should cultivate a field commensurate with its name. Accordingly we invite contributions from all sections of Western Canada, from the remote settlements of the country, where the first efforts of the husbandman are necessarily directed to the clearing of

the primeval forest, as well as from the older frontier counties, where the practical routine of agriculture has assumed a more regular and definite form. As heretofore, the proceedings and transactions of the Board of Agriculture, with a condensed summary of the Reports of all Agricultural Societies in this section of the Province, receiving Government aid, will continue to occupy a portion of these pages; and as the organization of societies improves, and their efficiency becomes consequently increased, this part of the Journal will assume a higher and more useful character. And to this point we wish to call the special attention of the Directors of our Agricultural Societies, who have the means of embodying in the reports which they send annually to the Board, much valuable information, both of a local and general character.

The Journal being published *fortnightly*, affords much better facilities than formerly, for communicating recent information on all subjects in which farmers are professionally interested; and as a means of official communication between the Board and Agricultural Societies, throughout this western section of the Province. There is reason to believe that these advantages will be more apparent and appreciated, year by year.

As this work is not intended to be made a means of pecuniary profit to the Board, or to its conductors, no space is devoted to ordinary trade advertisements, which usually occupy several pages of similar publications, and we are thereby

enabled to give a much larger amount of reading matter. We shall always be ready however to give publicity in our columns to all matters, such as the importation or sale of seeds, cattle, &c., in which the majority of our readers have an interest. And in giving agricultural news, local or general, as well as in presenting our readers with original and systematic papers on various points of interest in practical and scientific agriculture, we trust that the volume we are now commencing will be superior to its predecessors.

In conclusion we again earnestly invite those who desire to see this Journal maintained and improved, not only to use their influence in procuring subscribers, *but more especially to send us information for its pages.* In this way only can variety be secured; and the filling up of 768 pages a year, ought not to be left almost entirely to the conductors, who have many other pressing duties devolving on them. Long and laborious articles are neither requested, nor as a general thing wanted. We ask our farmers, to forward information founded on their own observation and experience; give us facts, however laconically expressed, and we will undertake to work them into shape. A communication or two yearly from some member of each society, would afford us as much as we either ask or desire.— Will not some of our young and enterprising readers try it?

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### The Census.

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The Census of the Province will be taken on the 14th day of the present month. It is of great importance, on many accounts, that this should be done correctly, and ample instructions have been issued by Mr. Hutton, the efficient Secretary of the Statistical Department, for the guidance of the Commissioners and Enumerators. Agriculturists and all other classes of the community should understand that there are constantly questions arising affecting the public interests of the country, in the elucidation of which the census is of the highest importance, but if not correctly taken, its value is more or less destroyed. It is also of consequence to the personal interests of each individual possessing property or status in the country, that the information sought should be obtained. We copy

the following portion of Mr. Hutton's instructions to the Enumerators relating to the Agricultural Census:—

"In taking the *Agricultural Census* which is to contain only the names of heads of families occupying lands, whether male or female, you will take care that opposite each person's name (in column 4) the total number of Acres occupied within the limits of your Enumeration District, by him or her, is legibly set down in good figures, and that columns 5, 6, 7, 8 and 9, when added, correspond with column 4.

"In column 50 it has been thought desirable to designate the value of Working Horses separate from other animals, as they are an important element in the agricultural policy of the country.

"Column 54 should include the Value of all the live stock mentioned in columns from 46 to 53 inclusive. They form a very important item in the wealth of the country, and will be a criterion of the Comparative state of Agriculture in each Township and County, and also in Canada as compared with other countries.

"In columns 62 and 63, you will set down the Number and Value of pleasure Carriages, and pleasure Sleighs, Cutters, &c., kept by each person. Where two or three are kept by the same person, the value of all may be set down in one sum in Dollars.

"Column 68 is left for any Remarks you may think right to make, as to cause of Deficiency in any particular Crops, &c., &c., &c.

You will endeavour to impress upon the people in your Enumeration District, that the information here sought has no reference whatever to taxation, and that accuracy in their returns is of the highest importance, in order to ascertain the state of the resources of the country and encourage the introduction and investment of Capital in the Colony, where the Statistics, truthfully taken, warrant the investment.

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### Agricultural Progress in Australia.

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A Statistical Congress has been held in London to enquire into the agricultural condition of the Colonies. At present the official reports are in possession of the Board of Trade, but will, we hope, soon be published. The following matter is taken from a report in the *Farmer's Magazine*. The gold production of the Australian colonies since 1851 has exceeded in value the enormous sum of £101,000,000; and the effect of this gold yield, and of the immigration it has induced, has been considerable, especially in Victoria. In this district the wages of skilled labour prior to the gold mining were 6s. and 8s. a-day; during two years they rapidly advanced, and for

a short time stone-masons and other mechanics were receiving wages as high as 4*s.* a-day. After a rapid fall there has been, until lately, some degree of steadiness at about one-third of these high rates. All articles bore enormous prices. When flour was £25 a ton at Melbourne, it was £200 a ton at the great gold field of Bendigo—100 miles inland—with a population of about 50,000. But now these difficulties are in the past. Bendigo has now a large incorporate town, Sandhurst, possessing excellent institutions. The area of land under crop has been rapidly extending, especially in the younger colonies. The crops include artificial hay. The extent under crop for 1858, was in

	Acres.
New South Wales.....	217,443
Victoria (taken March, 1859)..	278,960
South Australia.....	264,462
Tasmania.....	229,489
New Zealand.....	140,965
<b>Total.....</b>	<b>1,151,319</b>

The cultivation of the vine is considerable; the number of acres for 1858 being, in New South Wales, 1,180; in South Australia, 1,626; and in Victoria, 547. The cultivation of maize is now, likewise, very large.

An interesting fact is the large proportion of wheat land, as compared with that of other countries. For South Australia the wheat acreage is 71 per cent. of the whole area of land under crop; while in Ireland it is 11 per cent., and in Scotland only 6 per cent. The yield of wheat is remarkably small; as, for instance, 18 bushels per acre in 1858 in South Australia, and in 1859 only 12 bushels per acre. New South Wales ranges between these quantities. Victoria illustrates the importance of genial seasons. The following yield per acre of wheat for four years, shows a gradual annual diminution, caused by diminished or less seasonable supplies of rain:—

	Years 1856.	1857.	1858.	1859.
Bushels per acre..	26.9	23.2	20.7	19.9

A striking peculiarity of Australia is the large area of its naturally grassed country. Most of the waste lands, are, in their unimproved state, available for pasturage. The quantity of wool exported annually to the United Kingdom and

other places, amounts to nearly sixty millions of pounds weight.

	Lbs.
In the year 1807, New South Wales exported to the United Kingdom.....	245
In 1820.....	99,415
In 1835, New South Wales and Tasmania to all countries.....	5,500,000
In 1845, Australian colonies to United Kingdom only.....	24,177,315
In 1855, do.....	49,142,306
In 1859, do.....	53,700,542

### Principles of Cross Breeding.

[The following remarks are from an able article in a recent number of the *Journal of the Royal Agricultural Society of England*, from the pen of W. C. Spooner, Esq., the eminent Veterinary Surgeon.—Eds.]

The maxim "*like begets like*" is a rule having very extensive sway, yet, as propagation is the work of two parents, the respective influence of one or the other is a matter involving considerable diversity of opinion, and prevents anything like a certain conclusion being arrived at. We can not do better than consider, on the very threshold of our subject, the respective influence of either parent; for on this the merits of pure or cross breeding must principally depend. The most probable supposition is, that propagation is done by halves, each parent giving to the offspring the shape of one half the body. Thus the back, loins, hind-quarters, general shape, skin, and size, follow one parent; and the fore-quarters, head, vital and nervous system, the other: and we may go so far as to add, that the former in the great majority of cases go with the male parent, and the latter with the female. A corroboration of this fact is found in the common system of putting an ordinary mare to a thoroughbred horse; not only does the head of the offspring resemble the dam, but the forelegs likewise, and thus it is fortunately the case that the too frequently faulty and tottering legs of the sire are not produced in the foal, whilst the full thighs and hind quarters which belong to the blood horse are generally given to the offspring. There is, however, a minority of cases in which the opposite result obtains. That size is governed more by the male parent, there is no great difficulty in showing;—familiar examples may be found in the offspring of the pony-mare and the full-sized horse, which considerably exceed the dam in size. Again, in the first cross between the small indigenous ewe and the large ram of another improved breed—the offspring is found to approach in size and shape very much to the ram. The mule offspring of the

mare also very much resembles both in size and appearance its male sire. These are familiar examples of the preponderating influence of the male parent, so far as the external form is considered. We are of the opinion that, in the majority of instances, the size and *contour* in animals is influenced *much more by the male than the female parent*; and, on the other hand, that the constitution, the chest, the vital organs, and the forehead generally, more frequently follow the female.

*Pure Breeding*, which, when carried to excess, is called *in-and-in breeding*, has its advantages as well as disadvantages. Its friends observe with great force that when we have in breeding reached great excellence, it is folly to risk the loss of such excellence by means of crossing; and the more so as the defects of a parent may disappear in the first and second, and reappear in the third and fourth generation; "*breeding back*," as it is commonly termed.

Again, it is urged that great excellencies can only be perpetrated by union with similar excellencies, and beyond all this that there is a certain amount of advantage from an *unstained* lineage—from the very possession of breed, as it is designated. The objectors to *in-and-in* breeding urge, that by so doing we engender weakness of constitution, diminution of size, hereditary disease, and also a tendency to barrenness; but it is urged in reply to such objections, that they occur from want of sufficient care in weeding out defective animals, whether as respects constitution or size.

Examples of pure breeding are familiar to us in the admired race-horse, the first-class short-horn, and the South-down sheep; but, so far as purity of breed alone is considered, the mountain sheep of Wales, the Highland Scotch cattle, and the Shetland or Welch, are equally pure; but whilst the latter have been propagated without care or attention, the former have, by careful selection and rigorous weeding, been considerably enhanced in value. A striking example of long continued pure breeding is afforded by the Leicester flock of Mr. Valentine Barford, of Foscote, near Towcester, who has the pedigree of his sheep from the day of Bakewell in 1783 to the present time, and since 1810 he has bred entirely from his own flock, sire and dam, without an interchange of male or female from any other flock. He observes, "that his flock being bred from the nearest affinities—commonly called *in-and-in* breeding—has not experienced any of the ill effects ascribed to the practice." His flock is remarkably healthy, and his rams successful, but his sheep are small.

Examples of pure breeding are probably to be found in greater perfection in cattle than in sheep. The Devon and Hereford cattle have descended through many generations in unbroken lines, and owe the perfection they have attained to careful selection. The Short-horns, although considerably more modern in their origin, and

moulded into their present form by a series of successful crosses, have yet been preserved pure with even more rigorous care than the other breeds which we have mentioned. The solid frame and feeding properties of the Herefords—the quality of beef and richness of crears, as well as working properties of the Devons, are well known and generally appreciated; and yet these qualities are insufficient to resist successfully the encroachments of the Short-horns, whose early maturity and disposition to lay on both flesh and fat, joined with fair milking properties, are such that they outnumber both the other breeds combined.

History fails to supply us with the origin of our various breeds of sheep; but we doubt not that, for many centuries after the time of the Romans in this country, certain distinct breeds were perpetuated, with little improvement and little change. The progenitors of the present Southdown or Sussex breed, inferior as they were to their descendants, ranged probably, in the days of the Romans, over the Southdown hill; whilst another breed, happily extinct, occupied for the most part the hills and downs of Wiltshire and Hampshire. A large bony, narrow, but active sheep, with large head, Roman noses, and long curly horns, high in the withers and sharp in the spine, but yet the largest short-wooled sheep in existence, were the denizens of these counties during the last century.

In Wiltshire, although they remained as a pure breed much longer than in Hampshire, yet, as far as can be learnt, they were supplanted by the Southdown, whose superior qualities displaced the old Wiltshire altogether; and we are not aware of any instances in which they were crossed, except for the purpose of crossing them out by using again and again the Sussex ram. Mr. James Rawlance of Bulbridge, near Wilton, whose large practical experience, both as sheep-breeder and land-agent stamps his authority with considerable weight, observes in reply to the author's enquiry: "The last flock of this breed (old Wiltshire) disappeared about the year 1819, and the substitution of the Southdown commenced late in the last century. In many cases Southdown ewes as well as rams were brought out of Sussex to replace the horned flock, but in numerous instances the two breeds of sheep were crossed, and by the continued use of the Southdown ram the chief characteristics of the horned breed were merged in the Downs. The cause of the very rapid substitution of the Down for the Wiltshire may be found in the fact of the large number of enclosures of common fields which then took place. The sturdy horned wether was thoroughly competent to take care of himself when the system of feeding in common prevailed, but when each farmer could keep his flock separate, an animal of superior quality was preferred.

In Hampshire on the other hand, where the same sheep prevailed and were valued for their hardihood, and their powers of travelling far,

and folding hard, properties so valuable when the fertility of the light soils was mainly kept up by these useful manure carriers, these sheep were extensively crossed. Previous to the close of the last century, the Southdown sheep had been greatly improved by careful selection, and the name of the late Mr. Ellman was well known for his eminent services in bringing out and improving the latent qualities of this valuable breed. About the beginning of the present century the sheep-breeders of North Hampshire began to bestir themselves, and a few enterprising farmers procured some rams from Sussex, of the Southdown breed. Finding the experiment successful, it was repeated again and again, care being taken to select the largest, coarsest, and *blackest*-faced rams, which it was thought would suit the coarse sheep with which they had to amalgamate. How many crosses with the pure Sussex were used we cannot ascertain, but enough materially to alter the character of the breed, to cause the horns to disappear, and to change the color of the face from white to black; and, with these changes, to impart a more compact frame, a broader back, rounder barrel, shorter legs, and superior quality altogether, and yet preserving the hardiness and the disposition to make early growth, which the original flock possessed.

The Hampshire sheep may, therefore, be instanced as an example of successful crossing, and as a proof of what can be done by the male parent in changing, in a very few generations, the character of the original, and yet retaining some of its good qualities, thus forming a breed more intrinsically valuable than either source from which it is derived. It was found by Mr. Lawes, in his careful and valuable experiments, that the Hampshire sheep, although they were surpassed by the Cotswold, yet exceeded the Southdown in the amount of mutton raised from a given weight of food.

Some thirty years since a Hampshire farmer still living (Mr. John Twynam,) used the improved Cotswold ram with his Hampshire ewes, and the first cross exhibited the preponderating effect of the male. The produce, in size, general appearance, and wool, partook far more of the ram than of the ewe, and it was thought that a most valuable breed had been obtained, which, with the increased size, and weight of fleece, and disposition to flatten of the Cotswold, would combine the hardiness and folding capabilities of the Hampshire. It was found, however, no easy task to perpetuate such a breed after the first cross—the defects of the one parent or the other, would appear and reappear, in the second and third generation, and it was only by careful weeding that anything like uniformity could be attained.

Various attempts were made some years since to introduce the merino blood, with the idea that great benefit would be derived from the in-

creased quantity and the superior fineness of the wool; and undoubtedly, if the carcass of the Southdown and the wool of the merino, could be united in the same animal, the acme of sheep-breeding would be attained. It was found, however, that the quantity of the wool was not a sufficient recompense for the want of early maturity and feeding properties; and at length the Merinos disappeared, by the continued use of other rams. It is very possible, however, that they may have left behind them some improvement of the fleece, for it is equally difficult in breeding to get rid of a virtue or wash out a stain.

There are few districts in England in which some advantage has not been derived from the cross-breeding of sheep. Even the little mountain sheep of Wales, has been greatly improved by the Cheviot ram, a larger, superior, but still a mountain sheep. At the same time the Cheviots themselves have been improved for the butcher by crosses with the Leicester, the Cotswold, and the Down. The progeny have been increased in size, and fattened more readily. This breed has also been considerably improved by selection.

The testimony in favor of the advantages to be derived from the cross-breeding of sheep, when the purpose sought for is limited to the first cross is so strong that, however forcible may be the arguments of the advocates of pure breeding with reference to stock sheep, they sink altogether in weight, when sheep for the butcher are concerned.

We think, therefore, we are justified in coming to the following conclusions:

1st. That there is a direct pecuniary advantage in judicious cross breeding; that increased size, a disposition to fatten, and early maturity are thereby induced.

2nd. That whilst this may be caused for the most part by the very fact of crossing, yet it is principally due to the superior influence of the male over the size and external appearance of the offspring; so that it is desirable, for the purposes of the butcher, that the male should be of a larger frame than the female, and should excel in those peculiarities we are desirous of producing.

3rd. Although in the crossing of sheep for the purpose of the butcher, it is generally advisable to use males of a larger-breed, provided they possess a disposition to fatten, yet in such cases it is of importance that the *pelvis* of the female should be wide and capacious, so that no injury should arise in lambing, in consequence of the increased size of the heads of the lambs. The shape of the ram's head should be studied for the same reason. In crossing, however, for the purpose of establishing a new breed, the size of the male must give way to other more important considerations; although it will still be desirable to use a large female of the breed which

we seek to improve. Thus the Southdowns have vastly improved the larger Hampshires, and the Leicesters the huge Lincolns, and the Cotswold.

4th. Although the benefits are most evident in the first cross, after which, from pairing the cross-bred animals, the defects of one breed or the other, or the incongruities of both, are perpetually breaking out, unless the characteristics and conformation of the two breeds are altogether averse to each other, nature opposes no barrier to their successful admixture; so that, in the course of time, by the aid of selection and careful weeding, it is practicable to establish a new breed altogether. This, in fact, has been the history of our principal breeds.

The Leicester was notoriously a cross of various breeds in the first instance, although the sources which supplied the cross is a secret buried in the "tomb of the Capulets." The Cotswold has been crossed and improved by the Leicester; the Lincoln, and indeed all the long-wooled breeds, have been similarly treated. Most of the mountain breeds have received a dash of better blood, and the short woolled sheep have been also generally so served. The Hampshire and the present Wiltshire Downs, have been extensively crossed; the friends of the Shropshire, cannot deny the "soft impeachment;" and the old black-faced Norfolks have been pretty well crossed out altogether. The Southdown is perhaps one of the purest breeds we have. No one asserts that the immense improvement of this breed by Ellman was due to any crossing.

### Hints on Shingling.

A correspondent of the *New England Farmer* recommends the soaking of shingles in a thin white wash made with brine instead of water. However wide the shingles he never allows the nails to be more than two inches apart; for the following reason: If shingles are wet or green, and the wide ones are nailed at the edges, the shingle will split, or one of the nails must draw when the shingle shrinks. If the shingle is dry, it will crowd the nail out, when it swells. The nails should not be driven quite in, so as to sink the head; for the heads of the nails hold up the but of the next row of shingles, and allow the air a free circulation. He lays all his shingles in white-wash prepared with brine; lines with red chalk; whitewashes the last course laid down to the line, and when completed whitewashes the whole of the roof. In this way it is contended that shingles will last twice as long as in the ordinary way.

In Canada shingles are sometimes laid in mortar, thereby rendering the roof warmer and less liable to burn in case of fire. It is also said that the mortar tends to preserve the shingles. We should be glad to hear from such of our readers as have had experience in these matters, which are of importance to farmers, as well as other portions of the community.

### Root Culture.

EDITOR AGRICULTURIST,—Great benefit has flowed from the excitement of competition in the growth of prize crops of roots during the last few years in the townships of Etobicoke and York, by means of private matches among the members of some of the Agricultural Societies. Before these matches were commenced few farmers would admit that it was possible to produce any large crop of field turnips in this country, on account of the seasons being too dry and the fly irresistible. These ideas have been scattered by the winds by the results obtained by the competitors in the growth both of turnips and carrots, crops of which have been raised, varying from twenty to thirty tons (old measurement) per acre, which, I believe, fully equals the average of similar prize crops in the old countries; and there the average of ordinary field crops is from eight to ten tons per acre.

Viewing then, the success which has attended these individual exertions it is much to be regretted that a similar system is not applied in the distribution of the large amounts of money devoted to premiums both by our Provincial and local societies. Although doubtless the quality of any crop is of immense importance, yet the quantity is not of less consequence, and the excellence of a small sample exhibited is no criterion of the success which has attended the cultivation of a whole crop. A couple of dozen of roots may be grown and a few bushels of grain prepared, and gain a prize without the exhibitor being either a general, practical or successful cultivator. Would it not then be of great advantage to devise some means by which these premiums might be given for crops to be examined on the land instead of for specimens to be exhibited in the tent. Still greater benefit would accrue from reports of judges being made up containing statements of the method, actual expense, and therefore profit or loss of cultivation. Below will be found an account of the cultivation of four-fifths of an acre of white Belgian carrots, grown during the past season. The land had borne a crop of oats during 1859, and underdrains with tiles had been put in at a depth of four feet, and thirty-three feet apart, in the spring of 1860, the other part of the field having been similarly drained during the previous months of December, January and February.

The first charge, at \$10 per acre, made against the crop for rent of the land, may appear exorbitant to many readers, but any clay land which is worth \$5 per acre without draining is certainly worth double that amount after being drained.

This account is not given as an example, by any means, of perfectly economical or thorough cultivation, for being otherwise engaged, my root crop was of small breadth, and did not receive that careful attention which would no doubt have produced a larger crop at smaller expense, many items in the actual cost having been capable of a large reduction under more systematic treatment.

*Dr.*

Four-fifths of an acre, at \$10 per acre per annum .....	\$8 00
Three ploughings, with scarifying, harrowing, rolling, &c .....	8 00
Ten cart loads of rich farm-yard manure, at \$1 .....	10 00
Man, horse and cart, one day .....	1 50
2 lbs. of seed, and sowing with hand seed drill .....	2 00
Boys thinning and hoeing by hand .....	5 75
Boy and horse hoeing twice, less than $\frac{1}{2}$ day each time .....	1 25
Digging, topping, and filling into barrels, 830 bushels at 75 cents per 100 .....	6 25
Four days carrying and storing in cellar .....	8 00
	<hr/>
	\$50 75
Balance .....	32 25

*Cr.*

368 barrels of  $2\frac{1}{2}$  bushels each, 830 bush. at 40 cents .....

\$33 00

Giving a balance of over \$50 per acre for rent and profit, the crop having cost in all \$6.12 per 100 bushels, a little over \$2 per ton, and the yield having been at the rate of 1037 bushels, or 31 tons (short measure) per acre. The total cost of draining this field as above stated, did not quite amount to \$27 per acre, which it is evident, is amply repaid by this crop in one season, and this can be done with every acre of clay land in Canada.

This carrot ground being but a small piece of land, and sown on the level instead of on ridges, horse labour was little used in the after cultivation, and this, of course, occasioned a greater expense and smaller yield. Ridging land is an indispensable preparation for the sowing of these root seeds, for the young plants being so exceedingly small and delicate a very little covering of earth will destroy them, and when they are sown on the level ground it is impossible to hoe them early by any horse machine, without throwing earth upon them, whereas if sown on ridges the horse hoe can be used among them as soon as seen above ground, the earth disturbed by the machine falling between the rows instead

of over the plants. This horse hoeing beside being cheaper is also far more efficient than hand labour; for to grow roots successfully the land should not only be kept perfectly clean, but be also *deeply* and frequently stirred.

I cannot conclude this letter without calling attention to the excellence of a horse hoe which I imported from Northamptonshire in 1861, made by Wm. Smith of Kettering. From the peculiarity of its construction it can be guided among rows of plants, no matter how crooked they may be, and if only parallel more than one at a time. I have hoed with this implement five rows of turnips, in passing once across and back, sown sixteen inches apart with Atkinson's large grain drill. Any other crop even of grain can be hoed with it if drilled; and on light land it makes an excellent scarifier or cultivator for a bare fallow, with only one horse, covering four feet of ground each time.

Yours, &c.,

HUMBERFORD:

West York, December, 1860.

### Agriculture in China.

Every substance derived from plants and animals is carefully collected by the Chinese, and converted into manure. Oil cakes, horn and bones are highly valued; and so is soot, and more especially ashes. To give some notions of the value set by them on human offal, it will be sufficient to mention that the barbers most carefully collect and sell, as an article of trade, the somewhat considerable amount of hair of the beards and heads of the hundreds of millions of customers, whom they daily shave. The Chinese know the action of gypsum and lime; and it often happens that they renew the plastering of the kitchens, for the purpose of making use of the old matter for manure.

No Chinese farmer ever sows a seed of corn before it has been soaked in liquid manure diluted with water, and has begun to germinate; and experience has taught him, (so he asserts,) that this operation not only tends to promote the growth and development of the plant, but also to protect the seed from the insects hidden in the ground.

During the summer months, all kinds of vegetable refuse are mixed with turf, straw, grass, peat, weeds and earth, collected into heaps, and when quite dry, set on fire; after several days of slow combustion the entire mass is converted into a kind of black earth. This compost is only employed for the manuring of seeds. When seed time arrives, one man makes holes in the ground; another follows with the seed, which he places in the holes; and the third adds the black earth. The young seed, planted in this manner, grows with such extraordinary vigor that it is thereby

enabled to push its rootlets through the hard, solid soil, and to collect its mineral constituents.

The Chinese farmer sows his wheat, after the grains have been soaked in liquid manure, quite close, in seed beds, and afterwards transplants it. Occasionally, also, the soaked grains are immediately sown in the field properly prepared for their reception, at an interval of four inches from each other. The time of transplanting is towards the month of December. In March the seed sends up from seven to nine stalks with ears, but the straw is shorter than with us. I have been told that wheat yields 120 fold more, which amply repays the care and labor bestowed upon it.

It is quite true that what suits one people may not on that account suit all countries and all nations; but one great and incontrovertible truth may, at all events, be learned from Chinese agriculture, viz., that the fields of the Chinese cultivator have preserved their fertility unimpaired and in continued vigor ever since the days of Abraham, and of the building of the first pyramid in Egypt.\* This result, we also learn, has been attained solely and simply by the restitution to the soil of the mineral constituents removed in the produce; or what amounts to the same thing, that this has been effected by the aid of a manure, of which the greater portion is lost to the land in the system of European (and American?) cultivation.—*Liebig's Modern Agriculture.*

### To obtain Weight of Live Cattle.

Experienced drovers and butchers are in the habit of buying cattle, estimating their weight on foot. From long observation and practice they are enabled to come very nearly to the actual weight of an animal; but many of them would be apt to err, if at all, on the right side; while the less experienced farmer always stands the greatest chance to get the worst of the bargain. To such we would recommend the following rule to ascertain the weight of cattle, which is said to approach very nearly the truth in most cases. The proof of this to the satisfaction of any farmer, is easily determined at most of the annual fairs where scales are erected, and at numerous other points in the country.

**RULE**—Take a string, put it around the breast, stand square just behind the shoulder blade, measure on a rule the feet and inches the animal is in circumference; this is called the girth; then with the string measure from bone of tail, which plumbs the line with hinder part of the buttock; direct the line along the back to the forepart of the shoulder blade; take the dimensions on

\* Vessels of Chinese porcelain are found in the pyramids, of the same shape, and with the same characters of writing on them, as on modern China at the present day.

the foot rule as before which is the length, and work the figures in the following manner: girth of the animal, say six feet four inches, length five feet three inches, which, multiplied together makes thirty-one square superficial feet, and that multiplied by 23 (the number of pounds allowed to each superficial foot of cattle, measuring less than seven and more than five feet in girth,) makes seven hundred and thirteen pounds. When the animal measures less than nine and more than seven feet in girth, thirty-one is the number of pounds to each superficial foot.

Again suppose a pig or any small beast should measure two feet in girth and two along the back—multiplied together make four square feet, that multiplied by eleven, the number of pounds allowed to each square foot of cattle measuring less than three feet in girth, makes forty-four pounds. Again, suppose a calf, a sheep, &c., should measure four feet six inches in girth, and three feet nine inches in length, which multiplied together, makes fifteen and a quarter square feet, that multiplied by sixteen, the number of pounds allowed to cattle measuring less than five and more than three feet in girth, makes two hundred and forty-four pounds. The dimensions of girth and length of horned cattle, sheep, calves, and hogs may be exactly taken in this way, as it is all that is necessary for any computation or any valuation of stock, and will answer exactly to the four quarters, sinking offal. The rule is so simple that any man with a bit of chalk can work it out. Much is often lost to farmers by mere guess work of the weight of stock, and this plain rule is well worth their attention.—*Valley Farmer.*

### Ayrshire Cattle.

This breed are so remarkable for yielding an abundant supply of milk, and are so well suited for the dairy, that they are worthy of notice. We have seen them in their native pastures on the banks of the Clyde, in Scotland, also in various parts of Europe and America, and in every place we have found them sustaining their high character as milkers.

The origin of this breed has not been clearly ascertained, but it is very probable that they have sprung from the native stock of the country, and that their excellence has been obtained by good management in selecting and crossing the breeding animals.

The Ayrshire cow is not large, but her shape and figure denote that she is made for milk. It is a well-known fact that cows which have a tendency to become fat, are seldom remarkable for yielding much milk, and are very apt to go dry early in the season. The Ayrshires are good milkers, but they do not fatten readily, and on this account are objected to by many breeders. The Devons and the Durhams have a much

greater tendency to fatten than the Ayreshires. The color of this breed is generally a yellowish red, mottled and spotted with white; the cows are remarkably quiet and docile, and when a large herd of them are feeding together in the rich green pastures of their native country, their appearance affords as pretty a rural sight as can be imagined.

The Ayreshires belong to the middle-horns, they have for a considerable time been considered as the best milkers of all breeds, but latterly they have been generally superseded by the Durhams, on account of the latter combining several desirable qualities. The beef of the Ayreshires, although of good quality, and possessing a good intermixture of fat and lean, makes a poor return to the butcher, and is not in much request. It is said that an Ayshire cow of small size will consume as much food as a much larger animal of the Devon or Durham breed.

Mr. Aiton, in his "Treatise on the Dairy Breed of Cows," thus describes the Ayreshires: "The shapes most approved of are as follows: The head small and rather long and narrow at the muzzle; the eye small, but smart and lively; the horns small, clear and crooked, and their roots a considerable distance from each other; neck long and slender, tapering towards the head, with no loose skin below; hind quarters large; back straight, broad behind joints, rather loose and open; carcass deep, pelvis capacious and wide over the hips, with round fleshy buttocks; tail long and small; legs small and short, with firm joints; udder capacious, broad and square, stretching forward and neither fleshy; low hung or loose; the milk veins large and prominent; teats short, all pointed outward, and at considerable distance from each other. The head, bones, horns and all parts of least value small, and the general figure compact and well proportioned.

The cattle from which the Ayreshires sprung are said to have been bred on Lord Marchmont's estates in Berwickshire, and at Lornberg in Kyle. They soon attracted the notice of breeders, and their progeny were eagerly sought after. It was not until 1780 that the improved breed was properly estimated and established in Ayshire.

The quantity of milk yielded by an Ayshire cow is very large for her size. Five gallons daily for two or three months after calving may be considered a fair average; she may be expected to yield three gallons daily for the next three months, and one gallon and a half during the succeeding four months.

The quality of milk is best known by the quantity of butter or cheese that it will produce. Three and a half gallons of the milk of an Ayshire will generally produce one pound and a half of butter, and twenty gallons, with the cream, will yield twenty-four pounds of sweet milk cheese.

The advocates of the Ayreshires say that they

will fatten as well as cattle of any other breed, and on this account strenuously recommend them to notice, but a little experience will show the fallacy of this representation, and prove that while they excel for the dairy, they are not very profitable for the grazier or butcher. A cross between the Durham and the Ayshire produces excellent stock.—*Detroit Tribune.*

### Observations on the Physical Geology of the Western Districts of Canada.

BY CHARLES ROBB, C. E., HAMILTON, C. W.

*From The Journal of the Canadian Institute.*

The investigation and illustration of the geological structure of the surrounding country, whether we regard it simply as a matter of scientific interest or of practical utility, must ever form one of the most prominent objects of such Associations as that of which this *Journal* is the organ. To those whose previous studies have given them a taste for, and aptitude in, such pursuits, no subject can possess greater interest, or add greater zest to the enjoyment of their excursions, whether of business or pleasure; while even to those whose acquaintance with geological science may be but superficial, the knowledge of those causes which have operated in determining the configuration of our coasts, and in producing the most prominent features of the scenery by which we are surrounded, must be a source of pure and elevating enjoyment. Again, as a striking instance of the benefit of such investigations in a utilitarian sense, I need only advert to the fact that both in Canada and in the neighbouring State of New York, before the deductions of geological science were brought to bear upon the public mind, large sums of money were squandered in abortive attempts to find coal in rocks below the carboniferous series. In exposing the absurdity of such attempts, and thereby rendering the resources thus wasted available in more profitable channels, the science of geology has conferred on this Province a service which will amply justify the expenditure of the sums granted by Government for the prosecution of these researches.

Sir Roderick Murchison computes that the money expended in England alone, before geology was understood, in searching for coal where it would now be considered madness to expect it, would be sufficient to effect a correct general geological examination of the entire crust of the globe.

I propose, in this and subsequent papers, to lay before the readers of the *Canadian Journal* the results of such investigations into the physical geography of the western districts of Canada as I have had it in my power to make during a residence of upwards of eight years in those parts

of the Province. The region embraced in these explorations is that lying between the Niagara and St. Clair Rivers, and the object in view in undertaking and prosecuting them, was chiefly the gratification of my own tastes, for which, however, professional engagements have afforded both opportunities and further stimulus. I lay but little claim to the merit of originality in the observations I shall have to record; the geological structure of the regions in question having been fully investigated and most ably reported on by our Provincial Geologists; and in stating my own observations I shall endeavour, as far as the nature of the subject will admit, to avoid repetition of the facts and phenomena which have been so fully chronicled by them, and to confine myself to such supplementary details and to such deductions and inferences as my own enquiries and studies may enable me to make. As illustrative of some of the most interesting peculiarities of structure in the region under notice, I propose also to reproduce the arguments of Sir Charles Lyell and other observers relative to the retrocession of the Falls of Niagara; in corroboration of which I have noted some additional facts which have not hitherto been recorded.

### SECTION I.

#### GEOLOGICAL FEATURES OF THE NIAGARA AND GORE DISTRICTS.

*General Description.*—The range of high lands which we are accustomed to denominate "the Mountain" running eastwards far into New York State—maintaining throughout a nearly uniform elevation of about four hundred feet above the level of Lake Ontario, and forming a platform or table land, in a basin of which Lake Erie is situated—bends round the head of Lake Ontario and continues in a north-easterly direction till it gradually disappears in the neighbourhood of the Bay of Quinte. The same geological formations do not, however, occur throughout the whole of this distance, as I shall hereafter point out. Along the northern shore of the lake, the ridge runs at a distance varying from four to eight miles from the shore, and presents a nearly uniform precipitous escarpment on its northern flank. Around Burlington Bay it approaches still nearer the margin of the lake, and at East Flamboro' bends to the northward and loses for the most part its precipitous character, and recedes gradually further from the shore, being not less than twenty-four miles distant in the rear of Toronto, though again, as we proceed farther east, we find it approach within nine miles. With the exception of the Niagara River, no streams of any importance empty themselves into Lake Ontario throughout this region, as might naturally be expected from the proximity of the ridge to the shore; and that remarkable river itself, as I shall hereafter show, presents

anomalies and peculiarities perhaps nowhere else to be met with in nature.

The geological structure of this region is remarkably simple, exhibiting no faults or distortions of the strata; but it is far from being less interesting either to the geologist or the general observer on that account. The rocks immediately underlying the superficial deposits consist of various members of the Silurian or oldest fossiliferous strata. They belong to those divisions of the Silurian system called the Middle and Upper Silurian, corresponding to, and no doubt contemporaneous with, the Carradoc, Ludlow and Wenlock groups of England. Nowhere do we find a more interesting section in a geological point of view. Referring to it, or rather to the continuation of the same formations in New York State, Sir Charles Lyell remarks:—"If we wish to see in perfection the oldest monuments of the earth's history, so far at least as relates to its oldest inhabitants, we must look here. Certainly in no other country are these ancient strata developed on a grander scale, or more plentifully charged with fossils; and as they are nearly horizontal, the order of their relative position is always clear and unequivocal. They exhibit, moreover, in their range from the Hudson River to the Niagara, some fine examples of the gradual manner in which certain sets of strata thin out when traced to great distances, while others become intercalated in the series. Thus, for example, some of the lime-stones which are several hundred feet thick in the Helderberg Hills, near Albany, are scarcely forty feet thick in the Niagara district: and, on the other hand, the rocks over which the cataract of Niagara is precipitated, dwindle away to such insignificant dimensions when followed eastward to the hills south-west of Albany that their place in the series can scarcely be recognized." Sir Charles adds "that a comparison of the fossil remains found in those ancient strata with those of a corresponding age and position on the other side of the Atlantic, shows that while some of the species are identical the majority are not, and that however close the general analogy of the forms may be, there is evidence of the same law of varieties in space as now prevails in the living creation." Since Sir Charles wrote the above remarks it has been ascertained on a more minute investigation that the number of species common to the Silurian rocks on both sides of the Atlantic is between thirty and forty per cent.; and it is a most interesting fact that those which are identical are precisely those which are found most widely diffused both geographically and in the order of superposition, and consequently seem to have been most capable of surviving many successive changes in the earth's surface.

Professor Sedgwick, at the recent meeting of the British Association in Aberdeen, in speaking of this order of geological formations, characterized them by a figure quaint and graphic,

though derived from modern feminine usages. He speaks of the lime-stone formations as a great girdle, or (in plain terms,) "loop," over which Dame Nature had spread her "glorious palaeozoic petticoat." Certainly nowhere on the face of the globe has this skirt attained a greater expansion, or been more gorgeously bedecked with the forms of ancient life, than in the locality now under notice.

To be continued in our next number.

### Carrots.

We have frequently had occasion to define the value of carrots as food for cattle, horses, etc., and, we think, have established the fact, that one acre of carrots will more than represent, in value of product, ten acres of oats, and still the amount of progressed inorganic pabulum taken from the soil by twenty tons of roots and four tons of the leaves of carrots, is only as follows :

	lbs.
Phosphoric acid.....	39
Sulphuric acid.....	57
Lime.....	197
Magnesia.....	29
Potash.....	134
Soda.....	103
And the elements of salt.....	85
Total.....	644

When carrots are fed upon the farm, a large proportion of these inorganic constituents find their way back to the soil, and in so progressed a condition, that the amount parted with in the form of milk, animal flesh, etc., can readily be spared, for they are fully compensated for by the progressed condition of that portion returned to the soil, added to the consequent progression of the inorganic matters contained in the soil itself.

It should not be forgotten that the carrot while growing, throws off matter, which although inferior to the portion assimilated by the carrot, is superior in status to the condition at which it was received into the organism, and thus it is prepared to furnish higher results for the future.—*Working Farmer.*

### Training Colts.

The proper time to commence training colts is while they are quite young, as it is then an easy task to handle them. Colts that run till they are three or four years old, are frequently stubborn and hard to manage. My plan is, to halter-break them while they yet run with the mare, and get them so I can lead them wherever I wish. When thus trained, they can be broken to the harness with comparatively little trouble. I next bridle them and get them accustomed to the bit, and they soon become bridle-wise. At

a year old I harness and drive them about, and when at two years old I put them in a wagon and drive them on the road. When they have become somewhat handy in driving, I give them a small load, and afterwards increase it. If the load is too great, before they are accustomed to drawing, they will fly back and refuse to draw. The principal cause of balky horses may very likely be the custom of loading them too heavily while breaking.

An instance which came under my observation, last winter, will illustrate this. A young man was drawing a heavy saw-log, and had a young colt hitched in with an old horse; the colt became fatigued with the exertion he had used, and refused to go any further, when the driver became vexed, and beat the poor beast sorely, which caused him to again spring forward with all his strength. Finding that the load did not follow, he again refused to draw, as might have been expected. If the load had been light enough to start at the first pull, the colt would cheerfully have done his share of the work.—*American Stock Journal.*

## Agricultural Intelligence.

### The Birmingham Cattle Show.

The twelfth annual Exhibition of this Society, embracing the midland counties of England, took place at the usual time, the beginning of December. Our readers are aware that it is only fat animals, consisting of cattle, sheep and pigs that are admitted to this exhibition, with the addition of domestic poultry and root crops. The display was considered by competent judges to have been fully up, both in magnitude and quality, to the standard of previous years; a result, considering the peculiarly untoward character of the past season, the scarcity of the keep, and the inducements offered to the farmer in the shape of high prices for the immediate sale of stock, must have been very gratifying to the promoters of of these meetings.

In the cattle department there appears to have been a slight falling off in the number of Herefords and Devons, but the deficiency was amply compensated by the additions to the ranks of the Scots, Long Horns, and cross breeds, or grades. The Shorthorns were in number about the same as last year, and carried off the leading honors of the Show. The Duke of Beaufort's Durham Ox, under 3 years, won the first prize, and gold medal, and the extra prize of £20, for the most meritorious shorthorn of any age or sex; and, although so young, he is described as being very perfect in form, heavy in flesh, and ripe in condition, and one of the very best specimens the judges ever saw. Colonel Pennant, of Penrhyn Castle, bore away the palm with a white beast, which, in addition to the first prize, received the

gold medal given for the best cow or heifer in the show. Mr. Stratton, as usual, exhibited some animals of great merit, that obtained premiums. In Herefords, Lord Bateman had some excellent specimens. Our readers will recollect that Mr. Stone's recent importations are from this celebrated herd. The show of Devons was not large, but comprised several fine animals, evenly fattened; the Prince Consort was a successful competitor in this department. It is somewhat remarkable that only a single specimen of the Welsh breeds was on exhibition; but of different classes of mixed or grades there was quite a number of excellent animals.

The sheep are represented as being the best collection for a number of years. The Leicesters were in large numbers, and many of them unequalled for weight and quality. The South-downs and Shropshires were also excellent. The latter breed seem to be attracting increased attention in several districts of the British Islands. The innkeepers of Birmingham offered an extra prize of £10, and silver cup of equal value, for the best pair of long-wooled sheep, which were awarded to Mr. Lord of Driffield, Yorkshire. A similar prize and cup from the same parties, for the best pair of short-wooled sheep, were won by Lord Walsingham. In the department for pigs the principal feature was the class for Berkshires, of which there was a large and excellent collection.

**THE SCOTCH MOUNTAIN SHEEP.**—The committee on sheep for the late Show of the Connecticut River Valley Society, in their report, say:—The Black-faced Mountain Sheep of Scotland, exhibited by Isaac Stickney, Esq., of Boston, added much to the interest of the exhibition. They were a novelty. They have the appearance of being very hardy and heavy shearers; the wool long and suited to combing. They are evidently good nurses, or their lambs could not attain to a growth of 80 pounds at four months old. Your committee commend Mr. Stickney to the favourable consideration of the Society, and hope some suitable expression of our appreciation may in some form be tendered for his valuable contribution to the interest of our Fair.

**COTTON SEED CAKE.**—It is estimated that a ton of manure from a ton of decorticated or husked cotton-seed cake was worth \$27 86, while that from linseed oil cake was worth \$15 72c, and from Indian corn only \$6 65. Dr. Voelcker, chemist to the Royal Agricultural Society in England, as the result of several analyses, sums up the value of cotton seed cake, as compared with linseed cake, as follows:

"1st. The proportion of oil in all the specimens is higher than in the best linseed cake, in which it is rarely more than 12 per cent., and 10 per cent may be taken as an average. As a supplier of food, cotton cake is, therefore, superior to linseed cake. 2nd. The amount of oil in

the different specimens differs to the extent of 5½ per cent.: say 13.50 to 19.19. 3rd. Decorticated cake contains a very high and much larger per centage of flesh-forming matters than linseed cake, and is therefore proper to give to young stock and milch cows. The dung, also, is very valuable. 4th. In comparison to linseed, there is much less mucilage and other respiratory matter in cotton cake. This is compensated by the larger amount of oil. 5th. The proportion of indigestible woody fibre in decorticated cotton cake is very small, and not larger than in the best linseed cake. 6th, and lastly. It may be observed that the ash of cotton cake is rich in bony materials, and amounts to about the same quantity as is contained in other oily cakes."

### The Smithfield Fat Cattle Show.

The annual Exhibition of this club, originated 1798, was held at the usual place in Baker Street, London. December 10th, 11th, and 12th; and was honored with the presence of Her Majesty, the Queen, the Prince Consort, and the Empress of the French.

The *Mark Lane Express* observes:—

"It is well that the proposition of John Duke of Bedford, made in 1821, was not agreed to by the members of the club. That nobleman urged the breaking up of the club because "the markets of the metropolis and throughout the kingdom are abundantly supplied, the best and more profitable breeds of cattle and sheep have been brought into notice, and have made rapid and extraordinary progress in the estimation of the breeder and the grazier." The Duke, in conformity with this opinion—that the ends for which the club was associated were answered—withdraw his name from the subscription list. The withdrawal of such liberal support and so distinguished a presidency had the effect of arousing the energy of those members who remained, and who, in opposition to the great Duke, cherished the conviction that the ends of the club were much more extensive than he imagined, and so long as there remained cattle to improve, and farmers to improve them, never would be accomplished. The success of the club under the enlightened presidency of Earl Spencer and the Duke of Richmond, and the clever secretarial management of Mr. Brandreth Gibb and his brother, whom he succeeded, shows clearly enough that his Grace of Bedford mistook the dawn for the full daylight, and wished us to be contented with a few rare specimens of bovine excellence; whereas the real object of the Society has been to make the exceptional excellence of that day the rule of ours. Some few only in the Duke's time were aroused to the importance of breeding, to the heritage of good qualities; whereas now every tenant-farmer knows that it costs no more to have a well-bred animal than a bad one—nay, that the first expense of obtaining the good breed is swift and amply repaid in its early maturity

and fattening properties. Not a man now, however small his tenancy, but looks for the traits of blood, in whatever breed he may wish to select from, and as the adaptation of breeds to the districts is now pretty generally known, he is not long in suiting himself. How vast an addition such a change as this, brought about in the public mind by the Smithfield Club, has made to the breed of the country, cannot be estimated. Some glimmerings of light upon this question we do gain, however, from a comparison of certain local data. In 1732, for instance, the 76,210 head of cattle sold in Smithfield market weighed on the average 370lbs., and the 514,700 sheep 28lbs. In 1794 a great improvement occurred, for the 109,064 cattle weighed on the average 462lbs., and the 717,990 sheep 35lbs. In 1821, when the Duke of Bedford said that the objects of the club were answered, this average was considerably advanced, but the last thirty years have certainly seen a prodigious advance upon the average of '21. The principals of breeding laid down by Bakewell, and practised by the Collins and Booths, have spread far and wide, and been accepted without a demur. Science has assisted the breeder and feeder—the first to reduce the bone and offal, and increase the meat; the latter to improve the roots, and to combine them in such a way with other alimentary material, as to clothe the rectangular frame with muscle and fat in a firm and regular manner. Whereas we had some six or seven distinguished herds, we now boast about sixty, the owners of which are not only doing all they can to support their own reputation; but are exerting a very sensible influence upon all classes of breeders. From every locality where such a herd resides proceeds a small wave of progress and stimulus, and never will the labors of the club or the objects of the show be brought to a close until every beast bred in the United Kingdom is a gold medal animal. Such stock as the Durham Ox of a past century, and Colonel Townley's Beauty and Beauty's Butterfly of our own time, by standing out with such marked distinctiveness, prove better than anything that the breeder's work is far from being done. That the continued exertions of the members of the club are needed, is proved by the show of this year. It seems in such classes to have fallen back, and as a whole not to be so good as many of former years. There are none of those striking forms which attract and astonish. The disappointment which those may feel who are most interested in this matter, will be materially modified however, when they consider the unparalleled difficulties that have beset the breeder and the feeder throughout the last two years. The drought of last year and the flooding rains of this may account for much. It will not excuse the imperfect forms we know, but it will excuse imperfection in the fattening process. In looking round the yard we must bear in mind the spare pastures and the want of water which characterized the summer of '59, the inclement autumn which followed, the cheerless spring which succeeded upon a long variable winter, the succulent un-

sunned grass, and sodden lair of the past summer, and then the mouldered hay and un nourishing roots upon which they have been since "got up." Under such circumstances our view may be changed, and we may come to consider it, conditionally, a successful show. Suffice it to say that if it is a good representation of the state of the fat stock market generally, it does not speak hopefully for the profit of the producer, while it warns the consumer that when the turn of the year is made, he may expect to buy meat much dearer than he does at present.

Those who wish to know how the show of this year stands with respect to other years, in point of numbers, will be glad to glance at the following table:

	1855	1856	1857	1858	1859	1860
Devons .....	17	21	32	28	37	33
Herefords .....	20	21	36	28	18	17
Shorthorns .....	40	42	43	42	47	36
Cross-breeds ...	7	12	65	35	17	19
Extra stock.....	9	12	—	14	—	14
Sussex .....	—	—	—	—	15	15
Norfolk .....	—	—	—	—	4	4
Longhorns.....	—	—	—	—	4	3
Scotch horn'd					10	11
Scotch polled					13	5
Irish ditto....	16	13			1	1
Welsh ditto.					9	3
Other pure bred	3	18	—	26	—	2
	112	139	176	171	175	163

The class of Shorthorns continued to maintain their ground, and out of the 36 animals of that section, 23 were exhibited by the breeders. Mr. Baker's steer of 3 years and eight months carried off the gold medal, and is remarkable for his immense depth; measuring in girth 9 feet 4 inches, fed with great regularity, and the spring of the rib surprising. There were other animals among the cows and heifers possessing perhaps equal relative merit; and not only in the Durhams, but also in the other breeds, there was apparent the absence of that excessive degree of fatness, which for many years was a principal characteristic of the Smithfield Show. Much of the meat was unfit for human food, and a great loss was not unfrequently entailed both on the butcher and consumer. It appears that more rational ideas now obtain at all the fat cattle exhibitions of Great Britain and Ireland, including sheep, though, perhaps, not swine. The Herefords made a fair show, and were, on the whole, superior to those at Birmingham. The Devons formed a very ruddy class, much improved in quality of bone and meat; out of the 33 representatives of the breed 19 were exhibited by their breeders. The Devons very frequently fail in the rump, a defect that appears to have been less observable on this occasion. Although there were several good specimens of Sussex cattle, the reporter observes: "This breed does not contrast favorably with Shorthorns and Herefords, and certainly we were not the only

spectators who wondered why it is perpetuated."

Of the mountain breeds he remarks:

"It was quite refreshing to turn to the West Highland cattle. All lovers of the originality, the flash and fire of a mountain breed, paused as their eyes scanned the shaggy mantle, the deficient horns, and wild eye. It was impossible to look at Mr. Heath's second prize dun steer, without being lost for a time to the vexatious jostling of butcher's greasy men. The mountain breeze in fancy fanned the cheek, the foot trampled the springy heather underneath, and the rugged form before us, with coat all palpitating with the morning dew, assumed its native dignity, and bellowed forth its challenge to the leader of the advancing herd upon the echoing air. It is reported that the Royal Ladies of England and France spent more time in this class than all the others. The Duke of Beaufort's, who took the first prize, was also a dun shaggy fellow, girthing 8 feet 2½ inches, with fine springy shoulders, and wonderful quality. The greatest attention and the seduction of cake and barley meal have not rendered her submissive to familiarity, as our ribs can testify."

Of the Cross breeds the *Mark Lane Express* says:—

"We come now to as interesting a class as any in the yard, the cross or mixed breed, in which the spectator observes the results of many curious experiments. So far as the consumption of the country depends, it is to this mixed breed that we have at present to look, and it becomes therefore a matter of interest to observe which crosses appear to produce the most profit. It seems to be a recognized fact that a cross-bred animal develops earlier and fattens sooner than a pure-bred one, but that it is not capable of attaining to the same weight as a member of the pure breed, should the period of fattening be extended. In the steer class, the first and second prizes are taken by Mr. Cartwright and Mr. Martin. The first is the result of a cross between a Polled Angus and a Shorthorn. It has the contour of a Scot, with the depth in forequarter of the Shorthorn; colour, black. The mixture of the Aberdeen with the Shorthorn affords in Mr. Martin's red and white steer a compact and square form, to which good feeding has imparted a springy touch. The Norfolk and Shorthorn cross is exemplified in Mr. Beare's 2nd prize steer—a square heavy beast, with splendid hind-quarters. Of the union of the Shorthorn and Hereford Mr. Baker's splendid steer furnished a better example than we have ever seen. His girth was 9 feet 2 inches. His hips were thrown wide apart; his rump and twist were astonishing; his shoulders were well set, breast capacious, and great frame well and evenly covered. He did not retain the Hereford head, and had roan markings. We observed specimens of the same union in Mr. Tomb's and Mr. Martin's heifers—the former being of exceedingly good form and of a white color, and the latter rather small. The cross between the Shorthorn and the West Highland cattle was shown to result in

a roan bullock with level back and a rather saucy-looking head, not quite accommodated to the proprieties of civilization. This was Mr. J. Beasley's steer. In Mr. Ainsley's steer the cross between the Aberdeen and Shorthorn gives rise to an animal of large proportions, with fine springing shoulders, great depth, unlevel back, deformed rump and defective thighs—color red. Connoisseurs in fruit affirm that there is a certain hour or two hours, during which every pear or apple we pluck arrives at its full perfection and flavor. Those who would enjoy it most must watch their time, never being too impatient or too dilatory. It seemed to us that Mr. Gibbs' heifer had just arrived at this luscious state of perfect ripeness. There was not an animal in the yard that gave us so much this impression; and though we have witnessed the good effects of a cross between the Alderney and Shorthorn in a very marked manner before, we never have yet seen so good a specimen of its results. In color, white, with straggling red spots—a form perfect in evenness of fattening, and quality realizing all that one could desire. A cultivated German alive to the insipidity of veal, or a Frenchman escaped from the traditionary influence of frogs or made dishes, would abandon himself to a new and delicious delirium, as morsel after morsel of this dainty meat, gently pressed between the palate and the tongue, gradually dissolved away. No wonder that she was very highly commended. Mr. Longmore's prize (Shorthorn and Aberdeen) heifer exhibits surprising development. The cross of the Shorthorn with the Devon, shown in Mr. Ball's heifer, exhibits an animal very pretty and very small. The Shorthorn, it will be seen, is the backbone of the class, and stands in relation to other breeds of cattle very much as Leicesters do to other breeds of sheep."

#### SHEEP.

"The number of entries for 1857 and 1858 was 129 in each year: last year the number was 137. At the present meeting it is only 105; but, comparing the number of animals comprised in the pens of three as well as single specimens, we find 235 at the present show, against 289 at last year's unprecedented gathering. The scarcity of sheep food, owing to the late unfavorable seasons, sufficiently accounts for the lack of increase in a department of the Baker-street wonders, always so large and important. The Leicesters make an unmistakably good show both in numbers and extra quality. As wonderfully fine examples of what this breed may be brought up to, we cannot point to anything better than the gold medal wethers of Mr. Twitchell, of Wellington, Bedfordshire; their size is great, their mutton superb in the handling, wool very superior, while in beauty of countenance and fineness of offal they do credit to the breeder who has derived them from the flocks of Messrs. Sanday and Pawlett."

In Southdowns there was an evident deficiency in consequence of the absence of any specimens from the celebrated flock of the late lamented Duke of Richmond; but Mr. Ridgen, Mr. Kent,

and others, exhibited some remarkably fine and evenly fattened animals of this beautiful breed.

## PIGS.

There were 45 entries of pigs, that is 27 of three pens, and 18 single specimens, making in all 99 animals, about an average show. In point of breeding and fattening quality, this department never, perhaps, stood so high, and it elicited the warmest admiration. The Prince Consort was a successful competitor in this, as he was in the cattle department, the first premium was awarded to a pen of those little beauties of the White Middlesex breed, extraordinarily forward for their age. The silver medal was awarded to a black Berkshire of immense length, and still more surprising depth of carcass, and is described as "a truly wonderful animal" in the Suffolk and Essex breeds there were several very superior specimens.

## THE IMPLEMENTS.

"The galleries were, if anything, more crowded than ever. There was an increase of exhibitors, and less room for each. The shifts some were put to, to make the best of their machines in the space allotted, were amusing; and though we had frequently to judge of the movement and character of the whole machine from a mere fragment, and to push our investigations by the light of analogy into dark corners, we have been successful in finding most of the entries. We will first give a passing mention of those which rank as the novelties of the show.

Messrs. Burgess & Key, yielding to the general demand, have at length brought out a combined grass-mower and reaper for two horses, price £35, and another on the same principle, for one horse, price £22 10s. It is a combination of Allen's grass-mower, and an improved form of Hussey's reaper. To adapt the mower to the purposes of corn cutting, the great central travelling wheel is shifted to the left, and a wheel of equal diameter is placed a little in advance of it on the opposite side. Upon an elevated seat, immediately to the left of this plain wheel, the driver takes his place, balancing and commanding the cutting bar, which makes a clear 4 feet 6 inches cut to his right. This plays at the back of the frame, receiving its motion in the usual manner from the travelling wheel on the extreme left. Behind runs a little wheel with wormed standard, fitting to a screw socket in the frame by which the driver can raise or depress the level of the cutting bar. A platform is attached for corn cutting, to be cleared by a man with a rake. This folds up, and with cutting bar, will pass through a gateway five feet wide. The adaptation of parts to the duties required appears very good. The one-horse machine, on the same principle, is very compact and simple. With a 3 feet 3 inches cut it will clear about seven acres per day. In this, however, the workman's seat takes its support from above the axle, and extends the breadth of the frame.

With the intention of meeting the difficulties of an English harvest, Mr. Samuelson has pro-

duced a combined, very cheap, and good grass and corn cutting machine. As a mower only, the price is £22; for double purposes £24.—They are made for one or two horses. The frame is supported on two travelling wheels, both giving motion by internal cog gear. The cutting bar extends to the right, and for corn cutting is fitted with a platform, one man leading the horse and the other behind, delivering by rake either at the side or otherwise, in sheaf or swath, as desired. The platform is capable of being suspended, to enable the machine to pass through gateways.

Wood's combined machine for cutting grass and corn, price £35, is so generally known, and has been so well advertised, that no special notice need be made of it here. Sampson and Jewell of New Jersey, showed a very novel "paring and breaking cultivator," which received considerable attention, and a handsome testimonial from the Jersey Agricultural Society. A model only was exhibited in the gallery, but the real implement, some fifteen feet long, and seven feet wide, stood in the mews below, and this we saw. In operation it is intended to perform the entire work of the plough, scarifier and harrow. A diagonal frame carries four small paring ploughs, and between them revolve forks and knives to cut the soil, or furrow-slice as it rises, and to throw it to the offside of the implement, leaving a furrow for the four horses to walk in. This implement may be used separately for paring, ploughing, or scarifying, and may be employed as a traction machine for steam power. Spiked bands are made by a simple process, to embrace the hind wheels, to ensure the constant speed of the revolving forks, which are thrown in or out of gear as desired. For breaking up old turf and preparing the ground for roots, this seems, so far as we can judge, from the simple view of it in a quiescent state, one of the most economical implements that have come beneath our notice. Fitted for paring and breaking, the price is £25, delivered in London. The entire weight is 13 cwt.

The patent hay and corn lift, exhibited by Mr. White, of Missenden, Bucks, deserves attention. It consists of a tripod formed of three poles, each 45 feet long, with 75 feet of 3 inch rope, and the necessary pulleys and slings. The body of the cart is lifted from the axle, and suspended at any height the builder of the stack requires, in two minutes from the time of the load drawing up. The man or men unload in the usual way, and all over-headed pitching is got rid of. It saves much labour. The tripod is fitted with stretchers and rollers, so that it may be conveyed from place to place without being lowered; the price is £25.

Messrs. Dinsmore & Co., of Hyde-street, Oxford street, exhibited an air-pressure churn, wherein the globules which contain the butter are not broken by means of dashers, but in process of falling from end to end against a large body of compressed air pumped in from above. A longitudinal revolution is given to the churn, the axis passing through the vouge. It is said

butter is produced in ten or fifteen minutes : but we had no opportunity of judging. The price, with air-pump complete, of the 10-gallon size (with real capacity for 5 gallons) £2 5s.

Fourdrinier's portable hot air kiln deserves attention of all those who are troubled with damp unsaleable corn. The kiln is 12 feet by 6. Five quarters at a time may repose upon the perforated bottom. Between the false and the real bottom is a space of 9 inches, through which is driven, by means of a fan turned by steam or manual labour, a constant stream of hot air from a small stove placed at one end.—Thirty quarters can be dried in a day; and as the air does not come into contact with the fuel, the corn is kept perfectly sweet. The weight of the whole is about 35 cwt. The depth of the sides is three feet, but to these may be attached side-boards, and a tarpaulin covering. The price is £50. The use of merely cold air driven in this way through musty or damp grain will not often to sweeten or dry it sufficiently. Mr. Fourdrinier may be addressed Grove Terrace, Peckham; and we mention this because there are many not at the Show who this year may be glad to correspond with him.

**A COMBINATION PLOUGH.**—C Atkinson, of Fulton County, Illinois, writes to the *Prairie Farmer*, as follows, of a plough which he has invented:—Mine is one plow combined. The combination is thus: I place on the same standard a full right and left plough, which requires but a single beam; under this beam I place an axle and wheels, and in the same space between the holds I place behind another pair of wheels. This makes a full carriage. Immediately back of the standard I put a mole or subsoil plow. With this arrangement I turn a furrow each way, opening a space of two feet, and the sod lays each side on two feet more. By this means I work four feet with the draft of two horses. And when I wish to plant I let the whole plow into action, and bring my hind wheels together, so as to constitute a roller, which, while it compresses the mole furrow, also in its revolutions, brings corn from a hopper into this furrow, leaving the ground planted. For this my team will be from three to four horses, and they work eight acres a day. One other item of difference between my plow and "Farmer jr's," is that I obtained a patent the 10th of April. This arrangement is applicable also to the old ground plow, and has the advantage of acting as a fertilizer, as it exposes one-half of the subsoil to atmospheric action, and admits in the mole furrow the water and frost to disintegrate the compact earth. For comfort to those who desire it, I place a seat for the driver, as the plow takes care of its own work, and the driver the team.

**MANAGING AND FEEDING WORKING OXEN.**—Oxen working on a stone drag, on the foot of a plow, on the sled tongue, cart spire, or twitching stones or timber, should carry their head up, as

this enables them to do their work much easier those that work as leaders, forward, or other oxen, should carry their heads low, and have the yoke the right length, let the bows suit the neck; the yoke and bows to the leaders should set a little snugger than the nib oxen. Never use the whip but from necessity. - When about to strike the young steer or ox, ask yourself, "Will he know what I strike him for?" Let each ox have a name, and be sure he knows his name. Never speak a word to an ox without a meaning; have a particular word to start your team by, that all may pull together. Never hurry your team while riding behind them, lest they learn to haul apart. Oxen should be shod with a broad shoe, to travel on hard roads; the shoe on the fore foot should set back at the heel, nearly half an inch further than the roof bears upon it. Oxen are frequently lame by reason of short shoes. The best feed for oxen at hard work, is to give to each two quarts of meal, wet, mixed with good chopped hay, three times a day, and as much hay as he will eat; this is the highest feed working oxen ought to have, and on this they will work every day.—*Prairie Farmer.*

**UNCLE SAM'S FARM.**—The amount of land the United States Government has for sale is almost incalculable. All the people of fourteen States and five Territories derive their title to their land from the Federal Government, and the records and files evincing the inception of their rights are preserved in the General Land office, Washington. The public domain now covers a surface, exclusive of water, of 1,450,000,000 acres. The Government has sold about 120,000,000 acres of land during the last quarter of a century, for less than 150,000,000 dollars. It will thus be seen, Uncle Sam's farm is still sufficiently large for practical purposes, and though he should sell off lands for centuries to come, he would have an abundance still, even if he does not enlarge his borders by the annexation of Cuba, Mexico, and half the rest of the world.—*Rural New Yorker.*

### Jonas Webb's Visitors.

This celebrated English Farmer, so especially renowned for his Southdown Sheep, has frequently at his table visitors from various countries of the world. The following extract from the *Paris Journal d' Agriculture Pratique*, contains a Frenchman's view of Mr. Webb's domestic hospitality:

"Jonas Webb wished to retain us all for dinner. It was too good fortune to be able to study this great man in the bosom of the domestic circle.

"In entering the saloon, we were necessarily obliged to make known our nationalities. I, said one of the visitors, am from Russia; I from

Sweden; I from Saxony; I from Prussia; I from Spain; I from England; and I from France—we were all there, coming from distant countries, animated by the single agricultural sentiment and soon sympathetically united.

“This revelation of our diverse origins was not wanting, I assure you, either in interest or emotion.

At dessert M. de La Trabonnais presented in English our acknowledgments of gratitude. Jonas Webb responded with simplicity and modesty. The representative of Saxony in turn expressed thanks in his own language to this illustrious man, then the representative of Prussia, then that of Spain, then that of Russia, then that of France—each in our own language we paid our tribute of honor to Jonas Webb.

“The hero of this improvised fete was profoundly moved. He gave us one of those good shakes of the hand which comprise all nations, and which said to all: ‘It is one of the most precious advantages of agriculture to bring men together and to develop in them that fraternity which makes itself loved and blessed; and there can be no other combat on agricultural ground, than that of emulation.’”

**HOW TO PREPARE BONES.**—A correspondent of the *New Hampshire Journal of Agriculture* says:—“With a sledge-hammer break the bones into pieces, of one, two, or three inches; take a hogs-head tub, put in two or three inches of hard-wood ashes, the same depth of bones; then ashes and bones until full; pound or press solid as convenient; fill with water or urine, all that it will absorb. If done in the spring or summer, by the next spring it will shovel up fully decomposed, the bones being as soft as clalk.

## Gorticultural.

### Culture of the Chrysanthemum.

A correspondent of the *Gardener's Monthly* gives the following mode of growing Chrysanthemums: “Take off cuttings,” he says, about the middle of April, root them in sand, and, when well rooted, select pots of the size intended to flower them in. Place a few crocks in the bottom, then a few rough pieces of loam; add two good handfuls of guano, with some cow manure; then fill up the pot with good rich loam. Then plant a dozen rich cuttings in a pot, pinching off the points, using a rose on the pot at the first watering to settle the soil. Leave them in the greenhouse for a week (a frame would be better where there is that convenience); then place out of doors, full in the sun. Place the stakes in the pots as soon as convenient, tying the shoots out as they grow, pinching off the points every three weeks, until the last week of July, and watering with manure-water twice a week, taking care

never to let them suffer for water, or they will lose their lower leaves, which gives them a starved appearance. By following these directions, you will have plants which will be an ornament to any place, and amply repay your trouble.”

Another correspondent of the same journal gives his *modus operandi* of growing these beautiful “winter flowering plants,” as follows:—“Get two or three dozen of good sorts; and, as no doubt they will be in small pots, you must repot into larger, using a stiff, rather rich compost. After a little time, they will show signs of growing, when they must be evenly stopped by pinching. After this keep them dry till they begin to push forth, when water may be supplied; and if the pots are full of roots, shift into their flowering pots or plant out; in either case do not lose the ball. “Suppose that they are to be flowered in pots,” therefore, after their final shift, plunge the pots in coal-ash, or in the soil, giving them plenty of room; and, in the extreme heat of summer, if more even is added, little, if any, water will be wanted. Staking is the next point. This done, little else will be required till the time comes for bringing them to their place of flowering; and, whether this be a greenhouse, conservatory, or verandah, you will be repaid tenfold.”

### Mode of Destroying the Gooseberry Caterpillar.

The following means for destroying the caterpillar, so injurious to the gooseberry plant is given in *Hogg's Gardener's Year Book*:—“After the leaves of the gooseberries have fallen in the autumn, obtain a quantity of tar and spread it over the ground where the gooseberries are growing to the depth of two or three inches, and see that it reaches close up to the stem of the bushes. Allow it to remain undisturbed during the whole of the winter, and late in the spring; dig it into the soil as you would manure. The effect of the tar will be found to be destructive to the larva, and to have no injurious influence on the plants.”

### Remedy for the Peach Borer.

Several remedies have been proposed for destroying this worm, so injurious to the peach-tree, but most of them are utterly worthless. A correspondent of the *Gardener's Monthly* gives the following: “Take about half a point of common salt, and sew it up in a small bag of strong cotton cloth, such as common Osnaburg will answer all purposes; tie this in the fork of the tree, where let it remain until the salt is dissolved by the rains that fall, which will be in the course of two years, and the work is done.”

"The brine that runs down the trunk of the trees will kill both worms and eggs as they are deposited; besides, it proves a benefit to the tree. Should there have accumulated a hardening of gum at the surface of the ground, as is sometimes the case, it should be removed, so that the solution may reach the worms. It is equally as applicable for the apple-tree borer and aphids at the roots."

### Native Hardy Grapes.

The following statement of experience in the culture of hardy American grapes, which we find in the *Boston Cultivator*, will be read with interest:

Messrs. Editors:—From the numerous varieties of native grapes which I fruited the past season, I find a few which should be grown by every family, as they are sure to ripen at the North before the early frosts.

*The Delaware*, which has at present the lead of all the natives, ripened with me this season from the 10th to 15th of September. I found that some of the fruit left on the vines, endured the severe frost of September 30th without damage, while the leaves were entirely killed, and the fruit of other varieties on the same trellis was frozen. This I attribute to its rich sugary, vinous juice, which is like wine itself. The vines are entirely hardy, productive, subject to no disease, and very vigorous. Vines two years old have this year made shoots twelve to fifteen feet in length, of strong, short-jointed wood. No gardener should be without this delicious variety, as it is superior to all others cultivated. It is the most productive grape I propagate, and keeps long after being gathered.

*Blood's Black Seedling*.—A very hardy variety, never mildews, a free grower, of dark color, covered with a thick bloom, good size, flesh sweet and moderately juicy. It ripened with me this season August 25th to September 1st,—a very desirable variety, which should be in every collection; keeps well after being gathered.

*Logan*.—Bunch, size and shape are those of a medium Isabella. Color black, quality very good, quite as hardy as the Delaware, and a very fine grower; ripened September 10th, and is a desirable variety as an early grape.

*Hartford Prolific*.—Hardy, vigorous, and very productive. Bunches large, shouldered, and rather compact, covered with a thick bloom; flesh sweet, moderately juicy. Ripened with me this season September 12th; should be in every collection. The dropping of this grape, sometimes complained of, may be obviated by judicious pruning and proper cultivation.

*Marion*.—Very hardy, and a prolific bearer, even under the most unfavorable circumstances; makes a dark-colored, rich, Port-flavored wine;

ripened September 1st, and is a very desirable variety for wine making.

*Rebecca*.—I do not class this with the other varieties spoken of, as to hardiness, for in most situations it should be covered in the winter. I find my vines of the Rebecca where they are shaded some part of the day, are much more vigorous and productive in their habits than others not shaded. This is a white grape, juicy, sweet and delicious; it has no toughness or acidity in its pulp; ripened September 15th and will keep a long time after being gathered.

*The Diana*.—This variety with me this season was hurt by the early frost, which killed the leaves so that the fruit did not ripen. It usually ripens well, before the early frosts. It is one of the most desirable grapes we have. The fruit, when fully ripe, abounds in fine sweet juice, vinous and aromatic; begins to ripen a few scattering berries the middle of September, which are sweet as soon as colored; keeps improving till the middle of October, if allowed to hang so late.

*Concord*.—This is a very vigorous and healthy grower, and bears abundantly; some of my vines ripened their fruit this season September 25th, but that of others more exposed, was injured by the frost of September 30th.

I would here remark, that most failures in growing young vines, occur through the ignorance of those setting them out. The roots should not only be set in plain earth or mould, and not be permitted to come in immediate contact with manure or compost, especially when unfermented. In setting out my standard vines, I invariably incorporate a portion of sand or street wash with the compost; it keeps the ground porous and warm. Thus the wood matures much earlier, which naturally hastens the ripening of the fruit.

GEO. DAVENPORT. \*

*Dedham, Mass., Dec., 1860.*

We thank Mr. Davenport for the above remarks. He is one of the most successful cultivators of the grape in this section. Even the past season, unfavorable as it was for the ripening of grapes, he brought many kinds to perfection, and took the first premium of the Massachusetts Horticultural Society for the best outdoor grapes at the annual exhibition. The results of his experience are eminently worthy of attention from all who wish to learn the comparative merits of varieties for the northern section of the country.

*THE HYACINTH*.—Like the Rose, the Hyacinth is a universal favorite, and although great diversity of taste exists in floral matters, the merits of the Hyacinth are never questioned. It is loved by every one for its beauty and its fragrance. It will thrive in almost any soil; and will flower almost as finely when grown in water as when planted in the richest compost.

**VENTILATION OF THE APPLE BARREL.**—By this we mean the boring of holes in the head staves of the barrels that will allow the escape of the moisture that is constantly passing off from the newly gathered fruit. We hazard nothing in the statement that one-half the fruit sent to this market this season, so far has been materially injured from this cause. The effect of confined vapor upon the apple is not at once apparent. The fruit appears uncommonly bright on the first opening—but as the surface dries off the apple begins to grow dull looking, and if a light skinned apple in a day or two will present the appearance of half-baked fruit.

But this steaming from confinement not only injures the sale of the fruit, but to the great disappointment of the consumer, his fruit does not keep as he supposed it would, and as the variety of apple he purchased led him to suppose it would. Premature decay is sure to follow as a consequence of this want of ventilation.—*Chicago Fruit Dealer.*

**HOW TO PLANT WILLOW.**—Mr. Skean gives the following directions to the *Farmer and Gardener*. "The proper time to plant is before the sap starts in the spring. Take your limb or pole, point it with a keen hatchet, and having made a hole with a suitable crow-bar, insert the pole, tapping it on the top with a mallet to make it firm; or, what is equally good, ramming the ground firmly around it with a common post-rammer. The pointed end should be inserted, if possible, until it reaches the water, otherwise they will not thrive so rapidly. The willow succeeds best where the water is fresh, and not stagnant."

**IN-DOOR PLANTS.**—Plants in rooms should be watered more frequently than in green-houses, and they should be syringed over the tops *every evening* about sunset, in dry weather. The syringing will not injure a carpet upon the floor, if the water is wiped off immediately after the drip ceases to fall from the leaves.

Those that I would recommend as the best to flower in parlors are the semi-double, and that have a green calyx; also all the single varieties. The plants should have air, by letting down the top sash whenever the weather is mild, or when there is no frost in the atmosphere, for a short time, though it may be cool. Camellias require a great quantity of air; they will bloom in a room where the heat varies from 35° to 50°; but will bear a much greater heat, and bloom well, and on some occasions they will flower, even though the earth on the top of the pot has been slightly frozen, but extremes, either of heat or cold, do not suit them.

I have had Camellias bloom finely on tables, as above, where the sun did not shine on them; but, in such cases, they should have a great quantity of light.

I generally use soft water for my plants, both winter and summer, and it is better if warmed

to the same temperature of the room in winter. As to general watering I think it best, whenever the top soil begins to get dry, to water well and freely, so that the water may pass to the bottom roots, and to repeat the watering when the surface begins to get dry, to water well and freely, so that the water may pass to the bottom roots, and to repeat the watering when the surface begins to dry again; when Camellias are blooming or growing, they require more watering than at any other time.

In the latter part of May, after danger of frost is over, the plants should be removed to the open air, and placed in a situation where they will be shaded from the mid-day sun. Here they will only require watering occasionally, until time for re-potting, and removing to the house, in the autumn.—*London Floricultural Cabinet.*

**GISHURST'S COMPOUND AND MILDEW IN GOOSE-BERRIES.**—A writer in the *English Cottage Gardener*, who had used dressings of the usual mixtures of soft soap, soot, dusting with sulphur, &c., to cure what is called mildew, without avail, syringed all the vines in one viney with Gishurst's compound in the mild form of two ounces to the gallon of water, and not the least sign of the disease had appeared (Nov. 1) at the time of writing. He also syringed wall peach trees, on which the mildew or disease (for he regards it as distinct from mildew) had become visible, with about three ounces of the compound to the gallon of soft water; in a few hours the disease had turned quite black, and the trees have made an excellent growth.

The same writer speaks enthusiastically of this Compound's effect upon insects. He used it first on a three light frame of verbenas, and they were all cured of the fly at the first dressing, without injuring the plants. No second dose is necessary, if properly mixed in soft, warm water. He closes with the assertion, "you may depend it is one of the greatest boons to the gardener for more purposes than destroying insects."

**CURIOUS ALLEGED DISCOVERY IN FLORICULTURE.**—It is said that Mayor Tiemann, at his paint factory in Manhattanville, has accidentally made a discovery which threatens to revolutionize floriculture. One of the factory hands having thrown some liquid green paint of a particular kind on a flower-bed occupied by white anemones, the flowers have since made their appearance with petals as green as grass. The paint had in it a peculiar and very penetrating chemical mixture, which Mr. Tiemann has since applied with other colors, to other plants, annual, biennial, and of the shrub kind—the result being invariably that the flowers so watered took the hue of the liquid deposited at their roots. By commencing experiments early next year, during seed time, and applying different colors, we shall no doubt soon be enabled to "paint the lily," which was Solomon's ambition.—*N. Y. Tribune.*

**THE CLIMBING PLANTS.**—No class of plants are more useful in the hands of the skillful gardener than the climbers. They possess almost miraculous powers, transforming any unsightly out-building into an object of real beauty. No good gardener will have any bare board fences about his premises,—all are wreathed and festooned, and made gay and graceful. Then for covering cottage verandahs, what can equal this class of plants? They put to the blush all the expensive work of the architect, and the builder, and make the poor man's cottage appear more elegant—possessing more of nature—more of quiet grace—than the palace of a prince. For this purpose, the hardy varieties of grape vines are very useful.

The *Virginia Creeper* is an excellent climber, and although a native of our own land, much more popular in Europe than with us. Its leaves are digitate, of a dark rich green in summer, and becoming of a rich crimson in the autumn. It throws out little roots at the joints, by which it fastens itself to anything it touches.

The *Honeysuckles* we have in great variety, and everybody loves them, though we are sorry so few show their love in a practical way.

The *Periploca* or *Virginian Silk* is a rapid growing, fine climber, and will twine itself round a tree or any other object for twenty or forty feet in height. The foliage is bright and glossy, but the flowers are brown and not showy.

The *Chinese Wistaria* is one of the most rapid growing of all climbing plants, after it gets a fair start. Sometimes, for some unaccountable reason, it refuses to make any material growth for a year or two after being planted, but all at once takes a start and makes a splendid growth, throwing out shoots ten, fifteen, and twenty feet in length, in one season. It commences blooming early in June, and a large plant will be literally loaded with thousands of rich clusters or pendulous racemes of delicate, pale blue blossoms, so numerous that the plant seems to be a floral wreath. The racemes are from ten to twelve inches long, and well filled with delicate sweetly perfumed flowers. The foliage is abundant, and of a pleasant lively green. It succeeds best in a rich deep loam. It does not flower until the plant gets strong, and the older the plant the more freely it seems to flower.

The *Climbing Roses* are now to be had of almost every variety of color, and should be extensively planted.

The *Bignonia* or *Trumpet Flower*, is a magnificent climbing plant, producing large trumpet-shaped climbing flowers with something of an orange tinge, and of great beauty. They are produced in clusters. A good plant trained to a pillar or trellis, when in flower, presents a most splendid sight.

*Aristolochia*, or *Dutchman's Pipe*, is an elegant climbing plant, with very handsome,

broad leaves, and very curious flowers, closely resembling a meerschaum pipe, and hence the name. It grows fifteen or twenty feet high, and begins to flower in June. It makes a splendid shade for a verandah or summer house.—*Rural New Yorker*.

**ON THE CULTURE OF THE CAMELIA IN THE PARLOR OR DRAWING ROOM.**—I had three tables made, about five feet long and three feet three inches wide, with strides around the edges, so as to be about a third of an inch above the margins all round, and then common (sawed) laths cut into short pieces; and placed about two inches apart on the top surface of the tables, so that the water which ran from the flower-pots could pass from one part of the table to another, crosswise or lengthwise, and pass out at a notch in the edging spoken of above; by which means the pots would not stand in the water which runs from them. These tables I placed far enough from the windows and walls to allow a person to pass all round them, and to water and syringe the plants; which made a space of about one and a half or two feet in front and at the ends. The tables should be of a height in proportion to the windows, which windows should be made to let down at the top. By that means the plants can have air in upon them, without a strong current passing through them. This I consider a very important matter, as a strong draught or current of air is very injurious.—*Exchange*.

**PACKING FRUIT.**—A correspondent of the *Gardener's Chronicle* packs apples in shallow boxes, in dry bran. He finds it light, clean, elastic and excellent for packing. Packing peaches, nectarines, apricots and grapes to go long distances, he wraps the fruits snugly in tissue paper. Grapes are best sent in paper bags, in single layers, and the bran run in between layers of bags to keep all firm. Wheat bran is used after being sifted to get out all the small heavy particles of husks.

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## Domestic.

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### Good Housekeeping.

So much "Advice to Housekeepers," is constantly going the rounds of the press, that we feel a little diffident about broaching the subject; but as it is a prolific theme, and one of general interest, inasmuch as the comfort, health and happiness of every family depends very much on good housekeeping, we will venture a word. These writers on housekeeping—who, by the way, are generally men,—seem to think that one word covers the whole ground, and that is—work. To work early and late, to scrub and scour, and churn, and sweep, and wash, and bake—this, according to their theory, is good housekeeping. There never was a greater mis-

take. Some of the most notable workers we ever knew, were poor housekeepers. They made as much work as they did. To keep your whole house—garrets, closets, cellars—everything neat and clean; to see that nothing is wasted; to serve up well cooked food in an attractive and orderly manner; to have "a place for everything and everything in its place,"—this is good housekeeping. This sounds formidable enough, but one head and one pair of hands very often meet all these requirements, and that too, in an easy, quiet way, that seems like magic. It requires skill and forethought to keep all straight, but by giving everything its proper time and place, it is easily accomplished.

If a lady be mistress of a large family, it by no means follows that to be a good housekeeper, she must prepare every morsel of food, or do all the washing, sweeping, milking, and the thousand other things to be done in a family. She may not do any of them, and yet be a notable housekeeper. Any one can do the hard, rough work, but not every one can plan it rightly; and this planning, management, or whatever you please to call it, is the grand secret of perfect housekeeping. Without it, one may work hard all the time, and still have a comfortless and disorderly home, while with it, a vast amount of work is performed with little bustle or fatigue, and the housewife has leisure for more refined occupations, or for mental improvement. We have known many notable housewives, who thought no farmer's wife or daughter should take time for music or reading, or even fine needle work, but we cannot understand why the workers should not enjoy such pleasures, as well as the idlers of fashion.—*Mrs. Sarah S. Socol well, in N. J. Farmer.*

**USE OF SNOW IN COOKERY.**—A correspondent of the Boston *Cultivator* says:—"Put corn meal into a good-sized wooden or other bowl, with sugar and salt to the taste; then add twice or three times its bulk of snow, and stir it together with a spoon. When well mixed, it appears like so much dry meal or snow. Fry a little on a hot griddle; if it cooks too dry to turn well, add more snow; if too wet to be light, add more meal, when just right, fry on the griddle in convenient-sized cakes, and they will be as light as can be desired. I claim to have first suggested, to the best of my knowledge and belief, the above sure test for arriving at the right proportions, namely, trying a little on a hot griddle, and adding corn meal or snow, as the case may require."

**LEMON PIE.**—Take two quart bowls; in one squeeze three lemons and extract the seed. In the other beat three eggs, with three tea-cups of sugar, grate in some nutmeg, and set them aside. After mixing the crust, which I do with half a pound of lard to rather more than a pint of water, sometimes rolling it out and spreading on it a quarter of a pound of butter—at other times

omitting most of the butter—put the under crust on two plates; then mix the contents of the two bowls, pour it on the crust, cover them with the top crust, and bake immediately, with the lemon juice and eggs soon harden together.

If a more simple pie, add a teacupful of boiled corn starch. No milk.

**SALLY LUNN.**—I am tempted to send my recipe for this most delicious tea bread, which once eaten at your table, will cause your friends to rejoice when asked to come again.

Take a stone pot, pour in one pint bowl of sweet milk, half a teacup of baker's or other yeast, one-quarter of a pound of melted butter, a little salt and three beaten eggs. Mix in about three pint bowls of flour. Let it stand several hours, or until quite light; then put into Turk heads or other tin pans, in which Sally should again rise up before being shoved into the oven, to be "brought out" and presented to your friends as the beauty and belle of the evening.—*Cor. Country Gentlemen.*

**LITTLE PLUM CAKES TO KEEP LONG.**—Dry one lb of flour, and mix with six ounces of finely powdered sugar; beat six ounces of butter to a cream, and add to three eggs well beaten, half a pound of currants washed and nicely dried, and the flour and the sugar; beat all for some time, then dredge flour on tin plates, and drop the batter on them the size of a walnut. If properly mixed it will be a stiff paste. Bake in a brisk oven.

**QUEEN CAKE.**—Mix one pound of dried flour, the same of sifted sugar and washed currants; wash one pound of butter in rose-water, beat it well, then mix with eight eggs, yolks and whites beaten separately, and put in the dry ingredients by degrees; beat the whole an hour; butter little tins, tea-cups, or saucers, filling them only half full; sift a little fine sugar over, just as you put them into the oven.

**SEED CAKE.**—Beat one pound of butter to a cream, adding gradually a quarter of a pound of sifted sugar, beating both together; have ready the yolks of eighteen eggs, and the whites of ten beaten separately; mix in the whites first, and then the yolks, and beat the whole for ten minutes; add two grated nutmegs, one pound and a half of flour, and mix them gradually with other ingredients, when the oven is ready, beat in three ounces of picked caraway seeds.

**LEMON CAKE.**—Beat six eggs, the yolks and whites separately, till in a solid froth; add to the yolks the grated rind of a fine lemon and six ounces of sugar dried and sifted; beat this quarter of an hour; shake in with the left hand six ounces of dried flour; then add the whites of the eggs and the juice of the lemon; when these are well beaten in, put it immediately into tins, and bake it in a moderately hot oven.

**MOVING PIANOS IN WINTER.**—A piano if transported in very cold weather is liable to acquire so low a temperature that on being introduced into a warm room it condenses moisture from the atmosphere; and to the astonishment of the owner, the case, strings and other parts suddenly become bathed with perspiration. The instrument is thus exposed to injury. The difficulty may be avoided by throwing open the windows of the apartment in which the piano is received, so that the temperature of the air and of the instrument will be equal. After thus remaining for a short time the room may be very gradually warmed, and no condensation will take place.

**HOW TO BURN COAL.**—Nine out of ten who attempt to burn coal in a stove, waste about as much coal as is necessary to be consumed for the obtaining of all the heat desirable. Observe the following rules: We will suppose the stove cleaned out. First, To make a coal fire: Put in a double handful of shavings, or light kindling-wood instead. Fill the earthen cavity (if the stove has one,) nearly full of chunks of dry wood, say four or six inches in length. On the top put a dozen lumps of egg coal. Light with a paper from beneath. In ten minutes add about twenty lumps more of coal. As soon as the wood has burnt out, fill the cavity half to two-thirds full of coal. The fire will be a good one. The coal will, by following these directions, become thoroughly ignited. Second, Never fill a stove more than half or two-thirds full of coal, even in the coldest weather. Third, When the fire is low, never shake the grate or disturb the ashes, but add from ten to fifteen small lumps of coal, and set the draft open. When these are heated through and somewhat ignited, add the amount necessary for a new fire, but do not disturb the ashes yet. Let the draft be open half an hour. Now shake out the ashes. The coal will be thoroughly ignited, and will keep the stove at high heat from six to twelve hours, according to the coldness of the weather. Fourth, For very cold weather. After the fire is made according to the rules first and third, add every hour about fifteen to twenty lumps of egg coal. You will find that the ashes made each hour will be about in that ratio.

This advice relates to cylinder stoves of medium size, as the amount of coal to be fed in depends on the space of the fire-box.—*Scientific American.*

**WESTPHALIAN HAMS.**—The justly celebrated Westphalian Hams are cured in a pickle prepared as follows:

Boil together over a gentle fire six pounds of good common salt, two pound of powdered loaf sugar, three ounces of saltpetre, and three gallons of spring water. Skim it while boiling, and when quite cold, pour it over the hams, every part of which must be covered with the brine. Hams intended for smoking will be sufficiently

salted in this brine in two weeks; though if very large, more time may be allowed. This pickle may be used repeatedly, if boiled, and fresh ingredients added. Hams, before they are put in the pickle, should be soaked in water, all the blood pressed out, and wiped dry. Much of the excellency of the ham is depending on the smoking. This should be done in such a manner that the ham shall be cool and perfectly dry through out the whole operation. If too near the fire they will be heated and their flavor injured; if the building be too close, the hams will be wet, and taste as if dipped in pyroligenous acid. At Hamburg, where large quantities are prepared, the hams are smoked in the upper story of high buildings, while the fires, which are made of oak or maple chips, are made in the cellars. In passing through such a length of pipe to the chambers, the smoke becomes cool and dry; and the flavor of the hams is excellent. Hams intended for summer use, may be kept in any way where they will be dry and cool, and secure from the fly bug. Washing with lime or putting in bags of coarse cloth, one ham in each, is practised by many. Some keep their hams through the season in the smoke house, making a smoke under them once or twice a week.—*Wisconsin Farmer.*

**RECIPT FOR CURING MEAT.**—As the season has come round again for curing meat for the season, it may be acceptable to many readers—especially to many fresh readers—who may not have either preserved it, or have before seen it, to reprint our receipt for curing meat. We will add, that after using it for about twenty years, and comparing the hams so cured with others cured by a dozen different processes, we are more than ever convinced of its superiority. It is this:

To one gallon of water,  
Take  $1\frac{1}{2}$  lbs. of salt,  
 $\frac{1}{2}$  lb. of sugar,  
 $\frac{1}{2}$  oz. of saltpetre,  
 $\frac{1}{2}$  oz. of potash.

In this ratio the pickle to be increased to any quantity desired. Let these be boiled together, until all the dirt from the sugar rises to the top and is skimmed off. Then throw it into a tub to cool, and when cold, pour it over your beef or pork, to remain the usual time, say four or five weeks. The meat must be well covered with pickle, and should not be put down for at least two days after killing, during which time it should be slightly sprinkled with powdered saltpetre, which removes all the surface blood, etc., leaving the meat fresh and clean.

Several of our friends have omitted the boiling of the pickle, and found it to answer equally as well. It will not, however, answer quite so well. By boiling the pickle, it is purified—for the amount of dirt which is thrown off by the operation, from the salt and sugar, would surprise any one not acquainted with the fact.—*German town Telegraph.*

**KEEPING WINTER BUTTER.**—People who wish to keep their butter for winter use in the roll, can easily do so by covering their rolls, after laying them in the vessel in which they are to be kept, with a thick cloth—two thicknesses are better—which has been soaked in a strong pickle to which a very little saltpetre has been added. We have preserved butter all winter this way, and nearly if not fully as good as when put away.—*Dollar Newspaper.*

**PARISIAN MODE OF ROASTING APPLES.**—Select the largest apples; scoop out the core without cutting quite through; fill the hollow with butter and fine, soft sugar; let them roast in a slow oven and serve up with the syrup.—*Maine Farmer.*

### The Dairy.

**POINTS OF COWS.**—Mr. A. J. Fish, a dairyman of Herkimer County, N. Y., gives in the *Little Falls Dairyman's Record*, some observations on this subject. He says:

"I have never known a cow, with soft, fur-like hair and mellow skin, appearing yellow and gummy at the roots of the hair when parted with the hands, that was not a good butter cow, and when fattened, would mix tallow well with flesh. Instead of heavy head, horns, neck and shoulders, and comparatively light hind quarters, which is characteristic of the opposite sex, she should show an opposite design, by a feminine countenance, light head, neck, and shoulders, widening backward from her chest to the loin and hind-quarters."

### The Poultry Yard.

**BEST FOOD FOR FOWLS.**—What kind of food will cause hens to lay the most eggs, is a question much easier asked than answered. It will probably never be decided. Some recommend feeding oats; others say barley, buckwheat, etc.; and we say that it is a judicious rotation of feeding that produces the best results. No one kind of food will make hens lay well, unless they are provided with the requisite concomitants, such as fresh meat, in some shape or other, when worms or insects are not to be had; charcoal and calcareous matter to assist nature in forming the shell of the egg, all of which is found in a wide range, without our special attention, or at least enough to cause a hen to lay her maximum number of eggs. Broom-corn seed is a good grain to feed with, but hens will not eat it in its whole state with that avidity that they will eat other grains; but when ground, it is highly relished by fowls. Wheat screenings we have found excellent feed for promoting fecundity,

and sunflower seed is considered good feed for fowls, but they must be fed to them sparingly. No animal is easier kept than fowls. No kind of food comes amiss to them. When at liberty, they obtain their living promiscuously, and pick up every thing that can be made use of as food, in the farm-yard; even the worms, grubs and bugs give them most nutritious food; and it has been satisfactorily proved there is no substitute for potatoes, if they are boiled, mashed, and mixed with a little corn meal, middlings, shorts, or even bran, as a promoter of laying. The more varied the food, however, the better. As to green food, they are partial to lettuce, cabbage, endive, spinach, chickweed, grass-seeds, etc. Regularity, when fed by the hand, should always be observed in the hours of feeding, also in the quantity of food given. Do not surfeit them one day and starve them the next, but give the fowls their food as regular as you take your own meals.—*Country Gent.*

### Veterinary.

#### Relations of Veterinary to Social Science.

*Inaugural Address by Prof. John Gamgee, Delivered Wednesday, October 31st, 1860.*

[The following lecture was delivered in the new Veterinary School in Edinburgh, before a Miscellaneous audience, including of course the regular students. There is much in this inaugural address that will interest our readers, and prove suggestive to our farmers, as well as to the inhabitants of our towns and cities, where sanitary reform has yet a great work to do. To social science the most earnest, practical attention is now being paid in the British Islands.]  
—Ed.

"My main object on this occasion is to point to veterinary students the real position of the science they have to learn and the art they have to practise, and elevate their thoughts from the mere trade, which is all essential in his way, and which the wants or the greed of man too soon wed him to.

But I have another object in view, viz., availing of the privilege of a mixed audience, in fact, addressing the public, I consider it my duty to state, as clearly as possible, the various ways in which our profession, when followed out by enthusiastic and enlightened men, can confer advantages on the world at large.

I trust, gentlemen, that by the time I have concluded this lecture, I may have stated something which it is as well to state to students entering on the arduous task of learning a profes-

tion, and which there cannot be much harm in saying to them in the presence of a number who represent the non-professional multitude.

The relations of veterinary to social science are varied and numerous. No period could be more appropriate to draw public attention to them than the present. Social science is better understood than formerly, and the general feeling is eminently in favor of inquiry on all subjects relating to that important department of science, Public Health. A yearly increasing number of students flock to our colleges. The profession is growing in numbers, and it is essential to point out the many outlets for expending labour and talent of the best kind in a manner most conducive to public interests, and calculated to enhance the social standing of the veterinary surgeon. On former occasions I have strenuously opposed the opinion, that our profession is overstocked. I have, however, stated that there is a very ample field for the able and industrious. Mediocrity abounds. We now need excellence. But the best way of ensuring a higher class of men is to prepare the material for them to work at, and point out the many ways in which they can develop their powers, either as observers, generalizers, or with some simply as plodding workers in a field opened out for them by minds of a broader grasp.

Legislation has much to do in order to ensure that we shall get that share of public work which necessarily falls to us, and which can be undertaken by no other body of men; but, to attract the notice of legislators, and assert our worth in fulfilling many important duties, we must certainly be better prepared than we have been.

The subjects to be investigated, in order to reap practical benefits from scientific labor on sanitary matters, are vast and comprehensive. Their simple enumeration suggest to any one that there is much to be done, and, indeed, that there is no limit to these all-absorbing inquiries. Let us for a moment dwell on the part which should engage the veterinary profession.

In the first place, men and animals are subject to similar diseases—to diseases communicable one to the other, and to diseases which spontaneously originate either in man in some instances, or in the lower animals in others, and are transmitted from first to second, or second to first, without other means of development or propagation. The study of diseases, in their comparative relations in different animals, constitutes the science of Comparative Pathology. It must be obvious to all that the amount of danger man incurs by living amongst animals, under different circumstances, should be known, but on this all-important subject we need means of determining the spread of diseases in animals, their nature, and the extent to which they are committing ravages. That there are many un-

suspected sources of disease in man, from the prevalence of disease in animals, is often suggested. But positive facts are with difficulty obtained. I must illustrate my meaning. In different parts of England, Scotland, and Ireland, cattle are subject to anthrax, commonly known as quarter-evil, or by the more ludicrous epithet, "black leg." We have to thank our northern latitude for the rare development, in these cases, of the virulent anthrax poison, which destroys many human beings in warm climates. So destructive is this poison, that flies resting on the carcasses of animals that have died of this disease, or even on the parts affected in the living animal, may fly on to a man's face or hand, induce malignant pustule, and death in a short time. Though such accidents are doubtless extremely rare amongst us, we must not take it for granted that they do not occur. Dr. Keith, of Aberdeen, related a case to me where disease and death spread through the family of a man who dressed the carcass of an ox that had died of quarter-ill; and had we better means of collecting information on these subjects, many similar instances would doubtless come to our knowledge.

A cutaneous disease of very common occurrence in cattle, and which generally receives the name of ring-worm, is a pustular eruption communicable to man; and I have often seen bad boils—a furunculoid eruption—on the hands and arms of those attending these animals, which has led to considerable indisposition, and been difficult to cure.

Again, I may mention the vesicular murrain so prevalent in cows, attended with the development of a virus, which is often squeezed into the milk-can as the cow is milked. Such milk, drunk warm, will kill calves and pigs, and induce fever and cutaneous eruptions in men. Why shall it not be attended with dangerous and fatal consequences when partaken of by the infantile portion of the population, which consumes so large a quantity of the dairy produce.

But of late years considerable interest has been excited by the metamorphoses of parasites. In a piece of pork a few yellow specs of transparent vesicles, which do not appear of the slightest importance, may in reality be tapeworms in one stage of development, for the destruction of which we have to hope for prolonged boiling or efficient roasting. If the meat be eaten underdone, a parasite at once develops in the human intestine, which sometimes baffles human skill to displace it.

The veterinary surgeons throughout the length and breadth of our land, should be accurately acquainted with the parasitic diseases of animals, and I know of no more engrossing and satisfactory study than that of Helminthology.

Therefore, gentlemen, the sources of disease in man which are to be discovered by studying the diseases of animals, are far from few and

trifling, and facts regarding them should claim the attention of the veterinarian. On this very interesting subject I have to recommend perusal of two very lucid and elaborate papers by Dr. Lindsay of Pesth, and my esteemed friend Dr. Richardson, of London. Both these important contributions to comparative pathology were published in the first volume of the *Edinburgh Veterinary Review*; and I am proud to think that our annals of comparative pathology should contain the contributions of men so fitted to act as pioneers in the study of the sciences to which that journal is devoted.

Secondly, the diseases of men and animals are often due to similar causes. They are the result of cognizable agencies which operate alike on all living things, and their investigation, though almost exclusively engaged in by the medical man, should occupy the time and attention of enlightened veterinary surgeons. The evil results of over-work, over-crowding, absence of light in stables, as in dwellings, of artificial diet, of the nature of food as changed by modern cultivation, and the influence of such changes on animals, all constitute vast subjects for enquiry. The mysterious nature and operation of enzootic as of endemic influences, of epizootic as of epidemic influences, of miasmata and contagion, should as constantly occupy the members of our profession, devoted to the study of sanitary subjects, as members of the profession of human medicine.

It is a fact worthy of notice that the medical officers of health of the city of London—amidst their most interesting and intricate researches as to the influence of sewerage emanations, and a host of similar causes that are to be observed in all crowded cities, contributing to fill our hospitals and swell mortality lists, specially allude to the injurious influence exerted by stables and byres. In these matters, backed by adequate authority, veterinarians should effect much good. The *Medical Times*, in an article on the development of sanitary medicine, commenting on a report by Dr. Lankester, says,—“Stables are necessary nuisances. Horses or donkeys we must have; doctors as well as lords and costermongers; but then we ought to take especial care that they be kept in a suitable and laudable manner—i. e., up to the level of scientific sanitary requirement. But how seldom are they so kept! There are,” writes the doctor, “few sources of nuisance which are more constantly complained of than ill-kept and ill-drained stables.” In his own parish, he Dr. Lankester, has waged great and Garibaldian (successful) warfare against these Augean quarters, and reports the abatement of 203 out of 268 stable nuisances complained of. Happily, as it appears the owners of horses are more readily worked up to proper sanitary sentiments in behalf of their quadruped occupants, than householders usually are in behalf of their biped tenants. As

Dr. Lankester says—“The references to the notices of improvement in the stables showed that the owners were quite alive to the value of the health of the animals that lived in them; a response which it is sometimes difficult to arouse in behalf of the human occupants of houses needing sanitary amendment.” Dr. Lankester’s experience is encouraging, and it shows how, backed by the influence of authority, a person can accomplish that which, on the simple advice of professional men, can rarely be secured. Many of us have waged war against the denizens of filth and disease in which cows are kept, but we cannot boast of the success which has attended the assiduity of Dr. Lankester as medical officer of health.

Sanitary reformers, in considering the history of epidemics, have of late years disregarded far too much, in my opinion, the contagious nature of diseases. Cholera, typhus, yellow fever, &c., undoubtedly most destructive under the influence of defective hygiene—are maladies characterised by the development of a specific poison, which the Germans have termed the *contagium*, or principle by which contagion is effected. The investigation into the nature of *contagium*, of the many circumstances which influence and favor, or check it, presents to the veterinarian one of the most practical objects for enquiry that I am acquainted with. As Dr. Richardson says, in the article before alluded to, the production of maladies by the discovery of their poison, which Dr. Lindsay accomplished in regard to cholera, is one of the best means to settle questions relating to the origin of disease, and by careful experiment, much is to be accomplished which has ever been regarded as obscure, and circumstances are reconciled, which, on a superficial observation, have been regarded as contradictory.

I may be permitted here to quote the concluding sentences of Dr. Richardson’s paper. He says—

“1. That by experiment it might be proved, in what excreta of an affected animal the poisons of certain specific epidemics are located.

“2. By what surfaces of the body such poisons may be received, so as to excite their moribific effects.

“3. Whether the virus of a disease acts in the production of the phenomena of the disease, primarily or secondarily—i. e., by its own reproduction and presence, or by the development of another agent.

“4. Whether the effect of climate, season, temperature, moisture, and the like, in their influence on the spread of epidemics, act by modifying the poison which excites the epidemic, or by modifying the condition of the individual who is exposed to the poison.

“While the solution of any one of the problems suggested above would be a fact of the time, the enquiries themselves lie open to the

veterinarian even more invitingly than to the physician. His opportunities are greater for such researches, and his increasing science is leading his mind each day nearer to the appreciation of their worth."

That Dr. Richardson, imbued, as much as any man I know, with a catholic spirit and keen appreciation of the value of knowledge, does not agree with Vegesius as to the relation of veterinary to human medicine, is proved by the last paragraph of the essay, so frequently referred to. He says,—

"Recognizing, as I do, the importance to medicine of every addition to veterinary science and art, and the fact that medicine human and medicine veterinarian is as distinctly *one* as the animal creation is *one*, I feel greatly honored in having the opportunity of introducing into this new literary work this brief and very incomplete paper."

Though too moderately estimating his contribution to our first Scotch veterinary periodical, Dr. Richardson has proved, by much more than that short article, how far and deep the veterinarian can, with great benefit to himself and direct benefit to others, dive into the mysterious workings of nature.

It is obvious that the subjects I have alluded to, as constituting fit objects for inquiry on the part of the veterinarian, may be regarded as purely medical, and the investigations strictly scientific. Every observation pertains to science, and, with a scientific turn, an individual cannot pass a day without remarking and reflecting on something new to him, if not absolutely new to the scientific world. For this reason alone, if no other existed, it is advisable that professional men should occupy positions which are calculated to offer facilities for observations of importance to mankind, and the appointment of medical officers of health, or surgeons and physicians to hospitals in which subjects for scientific investigation, as well as for the sake of humanity, are congregated, tends to give a very decided impetus to the study of sanitary matters, and to the progress of medicine.

Veterinarians are debarred from these privileges. They cannot be debarred for long, as their services are urgently required. In France, Germany, and elsewhere, civil appointments exist for veterinarians; and by a satisfactory system of inspection, epizootic and contagious diseases cannot exist long without due attention being paid to them, and measures, often adequate to check the disease, being adopted.

There veterinary surgeons hold also position as inspectors of slaughter-houses; and I can state from personal experience of the class of men appointed to these offices, that they become very acute observers of diseased conditions, and frequently prevent the sale of food unfit for consumption by man.

In considering, gentlemen, the relations of

veterinary to social science, it is expedient that I should revert to the services which the public ought to expect from qualified men checking a dishonest trade in diseased animals. This is worse than all other dishonest trades, inasmuch as its effect is to ruin the health of many, though it more directly robs the poor of their means of sustenance; by selling unwholesome, if not unwholesome food, and this at a price which, however small, must be exorbitant—the material being often worse than worthless.

It has been my lot to speak very openly on this subject, and incur the displeasure of those whose interest it is to keep up the trade. It was even sought by some to prove that I injured the farmers, though, in reality, none more than the agricultural community have an interest in the appointment of such inspectors, and this for various reasons:—

1st. The sale of a larger number of diseased animals tends to some extent to diminish the price of healthy stock. If the first were discarded, the second would necessarily, in any case, be raised in price.

2nd. Every carcass can be proved of far higher value than the dishonest fletcher usually thinks fit to give. A very common price allowed is £1—occasionally much larger sums; but, as a general rule, the diseased animals would cover a great part of their first price as lean beasts, if turned to proper account. On this subject I hope on some early occasion, to speak at greater length, inasmuch as thousands of pounds are annually lost to farmers, either by the dishonorable trade in diseased beasts, or by the absurd mode of burying a dead animal, and not procuring from it the materials of great value, which are improvidently wasted.

3rd. Were well-educated veterinary surgeons to be appointed to slaughter-houses, they might in many cases, in passing an animal as wholesome which might have been supposed the reverse, check frauds which are rather common. As an instance of this, I may mention a case in which I was called in to condemn an ox for pleuro-pneumonia. I found him healthy, though suffering from slight temporary indisposition. Had I confirmed the opinion of the man who wished to condemn the beast, and said that the animal had the lung disease, it would have been sold at a great sacrifice.

Last. With the present system of meat inspection, diseases are entirely overlooked, or matters of minor importance are regarded as very serious. An organ might be condemned by the veterinary surgeon, whereas now the whole beast is destroyed, or *vice versa*. The agricultural community has, however, a direct interest that the veterinary profession should have the inexhaustible means of observation, to enlighten him on the diseases of stock, which can be furnished by no other means so readily as by the appointment of veterinary surgeons,

with salaries and authority suited to their stations as inspectors of slaughter-houses and dead-beat markets.

I have to suggest, however, that such officers should not be appointed by, and be the servants of town councils. With every respect for many worthy individuals serving the city in which they reside and their fellow-men, by accepting the honorary and responsible offices of town councillors, I unhesitatingly say that the authority for veterinary inspectors should come direct from Government, and, indeed, should in some way be connected with the Board of Health. This Board, and the accomplished officers which are attached to the Registrar-General, can alone estimate the importance, and suitably judge questions which might arise in connection with the proper inspection of the animal food of man.

To show the occasional inconsistency and perversity of municipal authorities on these points, I have only to refer to the slaughter-house inspector in Edinburgh. I repeat, what I have often said before, that I do not wish to interfere with the honest and industrious men who serve this city to the best of their ability; but £23,000 were spent not long ago in building suitable slaughter-houses, which are very perfect in all their arrangements, and would enable a professional man, with comparatively little labor, to judge of far the largest quantity of the animal food consumed in this city. When the present very respectable, but non-professional inspector was appointed, Dr. Alexander judiciously proposed that a scientific man should hold that office. Doubtless some of his duties could not be performed by a scientific man, but the most important can only be attended to by a person well acquainted with pathological anatomy and the diseases of the lower animals. I regret to say that it was a member of our profession who chiefly opposed Dr. Alexander in his wise and worthy endeavors to obtain for the city of Edinburgh an efficient professional inspector.

(Concluded in next number.)

**PASTURING HORSES.**—Few of the writers who have discoursed upon the management of horses have said anything about the summer grazing of these animals. Yet there are some points connected with it well worthy of consideration. Duatt says:

"The spring grass is the best physic that can be given to a horse. To a degree which no artificial aperient or diuretic can reach, it carries every humor that may be lurking about the animal. It fines down the roundness of the legs, and, except there be some bony enlargement, restores them to their original form and strength. There is nothing so refreshing to their feet as the damp coldness of the grass into which they are turned, and nothing so calculated to remove every enlargement or sprain, as the gentle exer-

cise the animal voluntarily takes while his legs are exposed to the process of evaporation that is taking place from the herbage on which he treads. The experience of ages has shown that it is the most skillful physic of veterinarians. It is the renovating process of nature when the art of man fails."

**WORMS IN HORSES.**—The best remedy for worms in horses is to give a strong ball, composed of 6 to 7 drachms Barbadoes aloes, according to size, first preparing the horse with a few bran mashies. There can be no difficulty in giving the ball with a person accustomed to do so. A good remedy also is to give about a wineglassful of spirits of turpentine, mixed in a pint of warm water, and a pound of molasses or soft sugar.—*Rural Affairs.*

## Transactions.

### Meeting of the Board of Agriculture.

The Board met, in accordance with a call from the President, at the office in Toronto, on Thursday, December 27, 1860, at noon.

#### PRESENTATION TO PROFESSOR BUCKLAND.

It being the intention at this meeting to present to Professor Buckland, a testimonial, which had been sometime prepared, of the value placed upon his services during the period in which he was Secretary of the Agricultural Association and of the Board, a number of gentlemen, in addition to the members of the Board, were present by invitation for the occasion.

The meeting having been called to order, the President proceeded to read the following address:—

"*Professor George Buckland, lately Secretary of the Board of Agriculture of Upper Canada.*

"SIR,—Your long connection with the Board of Agriculture as its Secretary, and the zeal and ability you have at all times exhibited in the discharge of the duties connected with that office, your courtesy and suavity of manner, as well as the earnest desire you have ever evinced to promote the agricultural interests of our country, determined the Board, at the time of your appointment to the important office of Resident Dean of Toronto University, and your consequent resignation of the Secretaryship of this Board, to present to you some tangible testimonial of the high estimate they entertained of your services, while connected with

them in the important position of their Secretary.

"The presentation of this testimonial has from several causes been delayed much longer than we anticipated, and it is only now that we have it in our power to carry out our design.

"We now request your acceptance of, and we are quite sure that we have the approbation of all our agricultural friends in tendering to you, this slight testimonial of our and their esteem.

"As President of the Board, I can say that I have never been called upon to perform a more pleasing duty than that which I now discharge in the name and on the part of the Board of Agriculture of Upper Canada."

To which Professor Buckland replied as follows:—

*Col. Thomson and Gentlemen of the Board of Agriculture of Upper Canada.*

"In accepting this testimonial as a gratifying mark of your respect and confidence, and appreciating its intrinsic value, I desire to express how deeply I feel the force of those moral and social relations, of which it may be regarded as an exponent.

"It is now a little more than thirteen years since I came to this country, and during the whole of that period it has fallen to my lot, in common with a number of friends whom I now see around me, to devise and carry into execution such measures as seemed best conducive to the advancement of the agriculture of this country. For some time our progress was slow, and numerous difficulties had to be surmounted. I well remember being present at the Second Annual Exhibition of the Provincial Association at Hamilton, in 1847, and the impediments in the way of subsequent progress, which seemed for a while to preclude any but the slenderest hopes, that the institution would be matured and attain to a permanent standing. By perseverance and united effort the prospects of the Association gradually brightened; its exhibitions yearly increased, both in the amount of material and in the confidence and good will of the public. And since the establishment of this Board by Parliamentary Statute, with a liberal support from Government to Agricultural Societies, great, if not rapid improvements have been effected in the various breeds of live-stock, in

agricultural implements and machines, and as a consequence, in the general cultivation of the soil, and the raising of farm crops.

"It will be found by observation that these improvements have been apparent in the increased efficiency of Agricultural Societies generally, and of the Provincial Exhibition in particular, which now takes rank with the foremost of its class on this continent, and, from what I recently observed of the working of similar organizations in Europe, it does not occupy, even when compared with them, an inferior position. Indeed, while observing in countries of the Old World, the results of their labors and mechanical skill in this ancient and most important of arts, I felt deeply struck with the rapid progress made in Canada, during the past few years; the whole of this great western section being almost an unbroken wilderness, half a century ago! I allude to these facts, not with a view to induce us to rest on our oars, but rather as incentives to yet greater exertions for the future.

"That my humble services should be considered as having, in any measure, contributed to the attainment of these results, will form a source of satisfaction and pleasure as long as I live, and stimulate me for the future, to do every thing in my power, to promote the welfare and happiness of my adopted country.

"I feel in this connection, it is only a simple act of justice to observe, that during the now rather long period in which I have been officially connected with this Board, and the Provincial Association, I have uniformly received from all my coadjutors, a kindly and courteous consideration, and a prompt co-operation in prosecuting the great objects for which we are associated; a circumstance that I shall always remember with feelings of gratitude and pleasure.

"Did the acceptance of this handsome Testimonial involve the severance of the link connecting me with the Board of Agriculture and a large circle of esteemed friends engaged in the patriotic work of agricultural improvement throughout the Province, my feelings on this occasion would be of a very different character to those which now animate my breast. I still have the pleasure of continuing among you, as a member of this Board. And in my new position in our Provincial seat of learning, I shall enjoy opportunities of aiding the important work of agricultural

education, and of promoting the great objects which it is the function of this Board to foster and secure. It is my intention to spend the greatest part of the summer vacation in visiting the Agricultural Societies of the Province, with a view of obtaining and imparting information.

"If Providence should extend my days beyond the ordinary period of active exertion, this handsome gift will continue to serve as a pleasing memento of past scenes and duties, and old cherished friends; and it will, I trust, descend as an heir-loom in my family, and serve to remind those who come after, that to enjoy the confidence and sympathy of their associates, they must act in a manner to deserve them.

"Permit me, Mr. President, in conclusion, to observe, that I feel peculiar pleasure in receiving this Testimonial at the hands of a Canadian farmer; one who has devoted a long and consistent life in promoting the agriculture and common good of his native land. And may that land, under the guidance of a beneficent Providence, continue to enjoy through all succeeding generations, the priceless blessings of British freedom, and the cheering light and immortal hopes of our common christianity!

The testimonial consisted of a silver pitcher and two drinking goblets, of handsome design and workmanship, and manufactured by Mr. W. Morrison, of Toronto.

On one side the pitcher bears the following inscription:—"Presented by the Board of Agriculture of Upper Canada to George Bickland, Esq., Professor of Agriculture in the University College, Toronto, as a slight testimonial of his long and valued services as Secretary of the Board and of the Agricultural Association, Sep. 1859." Underneath are two cornucopix, proceeding from which and forming a scroll around the inscription are ears of wheat, a scythe, rake, fork, &c., all beautifully worked and artistically grouped. On the opposite side of the jug, within a similar scroll, is the rural scene of a farmer plowing; and in front are the arms of the Association. The base is formed of a sheaf of wheat, leaning against which are various agricultural implements, such as a spade, scythe, hoe, rake and fork. The handle represents the branch of a tree deprived of its limbs, and is enriched with maple leaves in frosted silver. The goblets bear the inscrip-

tion—"Presented to Professor Buckland by the Board of Agriculture, 1859," and are neatly chased and engraved with fancy scroll work.

The Board then proceeded to regular business.

Present: E.W.Thomson, President; Hon. G. Alexander, A. A. Burnham, Hon. H. Ruttan, R. L. Denison, Hon. D. Christie, Professor Buckland, J. Wade, Dr. Beatty, J. E. Pell.

The President in the chair.

The minutes of previous meeting were read and approved.

The following letters and communications were submitted by the Secretary:—

From Mr. W. Ferguson, of Kingston, regretting his inability to attend the meeting.

From Mr. E. Garratt, of London, Provisional Chairman of the Local Committee for the Exhibition of 1861, recommending the names of certain persons to be placed upon the Committee.

From R. T. Pennefather, Esq., Secretary to His Excellency the Governor General, informing the Board that His Royal Highness the Prince of Wales had been pleased to place at the disposal of the Board the sum of Two hundred pounds, to be applied in the distribution of prizes, as shown by the following extract from a letter to Sir E. Head from His Grace the Duke of Newcastle:

"The sum of £200 to be placed at the disposal of each of the two Agricultural Associations of Upper and Lower Canada, to be applied by the Directors of those Societies he distribution of prizes in such way as may appear, after due consideration, best calculated to promote the important objects for which the Associations were formed."

From Mr. Fearman, of Hamilton, asking payment for certain articles lost at the late exhibition.

The Treasurer submitted his Report and balance sheet, with the report of the Auditors, showing, that for the financial year, terminating 18th September, 1860, including a balance of \$8,028 85 from the previous audit, the sum of \$51,718 65 had been received, and the sum of \$46,238 18 had been paid, leaving a balance in the hands of the Treasurer of \$5,480 47.

The Secretary laid upon the table the various publications which had been presented to the Board since the last meeting, consist

ing of the Transactions of the California State Agricultural Society for 1858; the Transactions of New York State Agricultural Society for 1859, several copies; the Transactions of Illinois State Society 1853 to 1859, 3 volumes; Transactions of Ohio State Society to 1859, inclusive, eleven volumes, accompanied by a number of other interesting Reports and Documents; Memoirs of the Literary and Philosophical Society of Manchester, England; Report of the Bath and West of England Agricultural Society, and several other works.

The thanks of the Board were voted to the various institutions which had forwarded their publications.

*Resolved*,—That the list of names submitted from London, to compose the Local Committee for preparing for the next Provincial Show, be approved, with the understanding that such Local Committee hand over to this Board the Grounds and Buildings complete at least ten days prior to the commencement of the Show, in accordance with the guarantee of the City of London.

*Resolved*,—That the next Exhibition be held on the 24th, 25th, 26th, and 27th September, 1861.

*Resolved*,—That the Board desire to express their grateful thanks to His Royal Highness the Prince of Wales for his munificent gift of £200 to the Association; that the money be permanently invested, and that the annual income derived therefrom be awarded as a prize at each successive Provincial Exhibition, to be called the Prince of Wales Prize, and to be given for such objects as may from time to time be deemed suitable and advantageous by the Board.

The Treasurer's Report was then taken into consideration and adopted.

*Resolved*,—That the thanks of the Board be given to the Auditors for their valuable services in auditing the accounts of the Association, and that they be paid the sum of twenty dollars each for each year.

*Resolved*,—That in future the accounts of receipts and expenditure shall be made up for the natural year, and that the accounts for this year, and for each future year, shall be closed on the 31st December, and audited with all convenient speed.

*Resolved*,—That the President, Professor Buckland, Mr. Christie, Mr. Denison, and the President of the Board of Arts, be a

Committee to consider and report to the Board at the next meeting, if any amendments are necessary to the Agricultural Act.

The Secretary stated that from certain unavoidable delays the reports which had been sent in by Agricultural Societies last summer in competition for the prizes then offered had not yet been examined and reported upon. As the reports were numerous and bulky, it was a work requiring considerable labor and time to examine them all carefully.

On motion a special Committee was appointed to examine the reports and report upon them.

After some further business relating to matters of detail, the Board adjourned.

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### Editorial Notices, &c.

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VISIT TO WOODHILL.—We had the pleasure of spending a day last week with the Hon. Adam Fergusson, of Woodhill, and of inspecting his herd of cattle. Since our last visit Mr. Fergusson has finished the improvements of his stables, byres, &c., which are now very warm and convenient, having thick walls of stone, with proper attention to ventilation; a matter too frequently neglected. Mr. F. still keeps up a small herd of pure shorthorns, and has several young animals of great promise. Among them we noticed several grades, possessing excellent points both in form and quality, clearly indicating the great advantages of crossing our best native cows with a shorthorn bull. The young shorthorn bull, *Garibaldi*, purchased from Mr. Wm. Miller of Pickering, is a large, fine animal, for his age, and promises well. His herd is kept in the ordinary way, carefully tended, but not at all pampered. The management is creditable to the farm bailiff—an intelligent Scotchman. We were glad to find Mr. Fergusson's health steadily improving, and hope shortly to see him again resuming his active and public duties. He continues as ever a zealous admirer and promoter of agricultural improvements, and is warmly attached to shorthorn cattle.

THE JOURNAL OF THE BOARD OF ARTS AND MANUFACTURES FOR UPPER CANADA: No. 1, January, 1861:

We hail with pleasure the advent of a new fellow laborer in the wide field of Canadian industry.

try. The Board of Arts and Manufactures for this section of the Province, which was established by statute some three years since, have, we think, wisely determined on issuing a monthly journal, the first number of which lies before us, and which is alike creditable to the editor, and the Board, of whose objects and proceedings it is the official exponent. The introductory article lucidly sets forth the objects which the Board seek to promote, and the interests which it is their duty to foster. The Board has determined on holding annual examinations for such members of incorporated Mechanics' Institutes as may desire to distinguish themselves in the various walks of useful learning, to whom certificates will be granted. The present number of the Journal contains full particulars of the subjects, text books, &c. We look upon this feature of the Board's proceeding as possessing great interest and importance, and its promoters must not be discouraged if it should progress but slowly. It took many years in England, before a similar plan became general and efficient in its working. Among the various useful subjects included in these examinations, we wish our readers to notice, are agriculture and horticulture.

As the Board of Arts and Manufactures is incorporated under the same Act of Parliament with the Board of Agriculture, and both to some extent have duties to perform in common, we regard with no common interest the success of this new and important undertaking. Agriculture, commerce, and manufactures should go hand in hand together; and the success of the two latter, must in this, as it has done in all other countries, beneficially affect the interests of the former.

The Journal will be published on the first of every month, at \$1 per annum for single copies, or to clubs of ten or more at 75 cents per copy; and to members of Mechanics' Institutes, for 50 cents per annum per copy. Communications whether for the Journal or the Board, should be addressed to the Secretary, W. Edwards, Esq. at the Board Rooms, 79 King Street, Toronto.

BLACKWOOD'S MAGAZINE, FOR DECEMBER; NEW YORK: L. SCOTT & Co.; TORONTO: H. ROWSELL.

This number completes the 83th half yearly volume of this world renowned Magazine; and, as usual, filled with articles of sterling merit, is one of the most important topics of the day, the one on the Theories of Food will be found universally interesting, and others, such as Iron-

clad Ships of War, A Visit to the Tribes of the Ryhanler Turkmans, Our only Danger in India, and Social Science, will be found equally so. We have in late numbers pointed out the excellency and marvellous cheapness of these reprints of the standard British Periodicals, and the present is a peculiarly fitting time for new subscribers to commence. Blackwood, with the four leading Quarterly Reviews, can be obtained for only \$10 per annum! Each is also sold separately.

TRANSACTIONS ILLINOIS STATE AGRICULTURAL SOCIETY.—We are indebted to Mr. J. P. Reynolds, Corresponding Secretary of the Illinois State Agricultural Society, for the Report of the proceedings of that Society for the years 1853 to 1859 inclusive, in three handsome volumes, and containing much interesting and valuable information.

OHIO STATE AGRICULTURAL SOCIETY.—Mr. J. H. Klippart, Corresponding Secretary of the Ohio State Board of Agriculture, has favored us with a parcel containing the following valuable works:—Reports of the Ohio State Board of Agriculture for the years 1847, 1848, 1850, 1852, '53, '54, '55, '56, '57, '58, '59, eleven volumes; Third Annual Report of the Commissioner of Statistics to the Governor of the State of Ohio, 1859; Proceedings of the State Board of Equalization, 1859-60; Report on the State House Artesian Well at Columbus; Annual Report of the Auditor of the State, 1859; Sixth Annual Report of the Superintendent of Hamilton County Lunatic Asylum; Amended By-Laws, Rules and Regulations for the State Reform Farm, near Lancaster, Ohio; Report of the Commissioners appointed by the Governor of Ohio to investigate the Massachusetts Cattle Disease, Pleuro-Pneumonia, together with several other reports and pamphlets, for all of which we have to return our hearty thanks, and we shall endeavor to make our readers better acquainted with the contents of some of the works at an early day.

DEWEY'S FRUITS, FLOWERS, AND ORNAMENTAL TREES.—We have to apologize for having omitted for a long time to notice some handsome colored plates of Fruits received from Mr. D. M. Dewey, Arcade Hall, Rochester, including Early Strawberry Apple, Belle Lucrative Pear, Trollope's Victoria Strawberry, Concord Grape. These plates are well executed and richly coloured. They are particularly useful to nursery men,

or agents selling fruit trees, as they are taken from nature by the best artists, and represent accurately the kinds of fruit named. They also form a handsome ornament for an office or parlour. They may be had singly or in books, bound to order. The price of colored plates of fruits and evergreens, 25 cents each; of grapes, flowers, and shrubs, 37½ cents each.

**The Agriculturist for 1861.**

The *Agriculturist* is published semi-monthly, each number consisting of 32 pages, and forming a volume of 768 pages.

The *Agriculturist* is exclusively devoted to Agriculture, Horticulture, and similar subjects. It is the cheapest paper of the kind in North America, and specially adapted to the circumstances of the soil and climate of Canada.

The *Agriculturist* is Post Free.

The terms of subscription are: Half a dollar per annum for single copies, Eleven copies for Five Dollars, Twenty-two copies for Ten Dollars; Thirty-three copies for Fifteen Dollars, &c. Payment always in advance.

**CASH PREMIUMS.**

As a further reduction in price on the largest orders, the following money premiums will be paid on copies ordered and paid for prior to or on 1st April next, viz:—

To the officer of any Agricultural Society, member of a club, or other person who shall send in the largest list of subscribers, accompanied with the cash, on or before the 1st April next, a money prize will be paid of.. \$20

To the person sending the next largest list, a prize of.....

19	19
18	18
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**The Agriculturist for 1st January.**

We shall send this number only to our exchanges, officers of Agricultural Societies, those who remitted payment for me re numbers that we were able to supply last year, and who have consequently a balance in their favor, and to those who have already favored us with their orders for this year. Our readers will please bear in mind that it is our practice to discontinue mailing the *Agriculturist* as soon as the term for which subscriptions have been forwarded has expired.

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