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OFFICIAL SERIES.

# THE FARMERS' JOURNAL,

AND

Transactions of the Board of Agriculture

OF

## LOWER CANADA.

VOL : XII. JULY, 1860. NO. II.

CONTENTS.

(General.)

FARMERS' JOURNAL.—(Editorial Matter ;) Application of the Sciences to Agriculture ; Grazer and Breeder ; Poultry Yard ; Rural Architecture ; Enquiries and Answers ; Foreign Agricultural Intelligence , Obituary , and Critical Notices , &c.  
HORTICULTURAL JOURNAL.—(Editorial Matter ;) Entomology , Meteorology ; Ladies Department ; Markets.  
EMIGRATION.

All communications to be addressed—If for the French Journal, to J. PERRAULT, Esq., Secretary-Treasurer and Editor :—If for the English Journal, to JAMES ANDERSON, Esq., F. S. S. A., &c., &c., Editor, Board of Agriculture, Montreal.  
N. B.—Communications received before the 15th of each month will appear in the ensuing Number.

*“ O! fortunatas nimium, sua si bona norint,  
Agricolos! quibus ipsa, procul discordibus armis,  
Fundit humo facilem victum justissima tellus.”*  
VIRG. GEO.

MONTREAL

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**Agricultural Society**

OF THE COUNTY OF

**MONCALM.**

The Annual Exhibition of the Agricultural Society of the County of Montcalm will be held at the Parish of

**ST. LIGOURI,**

in the County of Montcalm, on the Property

OF

**MR. THEOPHILE BRAULT,**

**On Wednesday,**

**The 3rd day of October next,**

at TEN O'Clock A. M.

By order,

A. H. DE CAUSSIN,

Secretary Treasurer,

A. S. C. M.

11-2.

July 1860.

COUNTY OF

**RIMOUSKI**

**AGRICULTURAL SOCIETY**

The General Exhibition of the County Rimouski will be held in the Village of

**ST. GERMAIN DE RIMOUSKI,**

**On TUESDAY**

**The 28th August next**

at TEN O'Clock in the morning.

By order,

J. B. LEPAGE,

Secretary Treasurer,

A. S. C.

11-

July 1860.

## JULY.

## CATTLE DISEASE.

We have deemed it to be our duty to direct the special attention of our Readers to this all-engrossing topic. Why have we no Cattle Insurance Companies in this country, on such a scale as to afford the necessary protection—to equalize the risk—and thus to prevent the overwhelming ruin of industrious individuals in infected localities. Prevention is ever better than cure. The following extracts from a respectable contemporary and its Boston Correspondent, will furnish some interesting remarks, with the requirements of the Laws just passed for the protection of the agricultural public.

“We return to this subject because we are deeply convinced that it is of the highest importance for the whole country. We republished yesterday an article from a contemporary in which it was urged that the Government should notify the different Agricultural Societies throughout the country not to hold any cattle shows during the present year, and prevent altogether, if possible, the importation of cattle from the diseased districts. The former suggestion is quite new and it would be a prudent precaution to act upon it. The latter has been previously discussed. The Attorney General West, stated in answer to Mr. Modougal in the House, that the Government have the power, without further legislation, to prevent importations from diseased districts. If so they should at once exercise it. The State of Maine has put in force such prohibition. It were madness to lock the door after the steed is stolen; and the precautions which are of no use are those which are taken too late. The information which has from time to time appeared in these columns has shown that the disease has steadily, for some weeks past, made its way in this direction from the locality in Massachusetts, whence it first spread terror and dismay and ruin. And it has we cannot too often repeat, been established the evil was first brought to this continent by diseased importations. The fact suggests that a *cordon sanitaire* should be established around the districts where it is known to exist. Very little satisfactory information appears to have been so far obtained respecting the nature of disease called pleuro-pneumonia. The only facts established are that it is epidemic and contagious. It was therefore with alarm that we heard the other day of what was supposed to be its presence at Huntingdon, L. C., causing the death of four cattle. We do not wish to point out to the Provincial Agricultural Association their duties in this matter. They ought to be the best judges of the responsibility devolving upon them. But we do say there is a very grave responsibility resting somewhere; and it appears to us the members or officers of the Provincial Agricultural Association, ought to be the first to take means of precaution. While there is death at the door, while week by week we see a disease steadily approaching which may carry wide spread ruin over the whole country, it does seem to us to be something like trifling or inexcusable ignorance for the Agricultural

Association to meet at Three Rivers to organize a great cattle show, which must be a failure, for the instinct of self interest will prevent farmers from taking their choice cattle to a great crowd, where one diseased beast, (and diseased it might be unknown to its owners,) might—indeed would, communicate it to hundreds, and so carry the evil over the whole country. There is no object to be gained from holding an exhibition adequate to such a risk. If the Agricultural Associations, either in Upper or Lower Canada, choose to brave such a risk, they ought not to be allowed by the Government. If the Government are apathetic, they in their turn ought to be constrained by the supreme voice, in the last resort, of public opinion. We should be glad if it should turn out that we have over-stated the imminence of the danger, but in that case, we say it is better that there should be an error on the side of safety. It is better to be over cautious now than to mourn hereafter.

—After we had written the foregoing, the letter of our Special Correspondent at Boston, which appears in other columns, stating the result of the special session of the Legislature of Massachusetts on this question, reached us. The facts therein contained are of great interest here.

Boston, June 13th, 1860.

The labors of the extra session of the Legislature will probably be brought to a close to-day. Two weeks have elapsed since the delivering of the Governor's Message ; and, with one or two exceptions, the attention of the members has been wholly given to the producing of such measures as would accomplish the end for which they were called together, namely, to consider the best means by which to check the spread of Pleuro-Pneumonia among the farming interests throughout the State. As the result of the session, two bills have been introduced and passed to become law ; both of which take effect immediately. One hundred thousand dollars have been appropriated to meet the expenses of carrying out the requirements of these laws. Of this amount twenty-five thousand dollars have been already expended ; thus leaving a balance of seventy-five thousand dollars for future expenditure.

The first of the two Acts comprises twelve sections. By the first section, the authorities of towns and cities are required to cause to be collected at some suitable place such cattle as are diseased, or may have been exposed to infection, and the cattle to be kept isolated so long as evidence of disease remains. When taken from their owners, the expense of maintaining them is to be borne, one-fifth by the town in which they are kept, and four-fifths by the Commonwealth. The second and third sections provide that all cattle infected with contagious disease be killed and buried at the expense of any town or city in which they are found.

Cattle so taken and killed, to be duly appraised by three disinterested persons ; and the amount of appraisal to be paid to the owner. By the fourth section, the authorities can " take and hold possession of any land or lands, with the buildings thereon, in their respective towns and cities, for which it may, in their opinion, be necessary to exclude all cattle of any description, or within which it may be necessary to inclose and isolate any cattle, for such time as the public good may demand." During and for the time of occupation of such buildings or lands, the

rent will be paid on appraisal. The fifth and sixth section regulate the passing of diseased cattle from place to place; and all cattle found passing in violation of these regulations, may be taken and detained at the expense of the owners thereof. Section seven enjoins the marking of diseased animals, and runs as follows:

“Such selectmen and mayor and aldermen are authorized to cause all cattle infected with such disease, or which have been exposed thereto, to be forthwith branded upon the rump with the letter ‘P,’ so as to distinguish the animal from other cattle; said brand to be not less than four inches in length and three inches in width: and no cattle so branded shall be sold or disposed of, except with the knowledge and consent of such selectmen and mayor and aldermen. Any person without such knowledge and consent, selling or disposing of an animal so branded, or selling or disposing of an animal known to be affected with such disease, or known to have been exposed thereto within one year from such sale or disposal, shall be punished by a fine not exceeding five hundred dollars, or by imprisonment not exceeding one year.”

By the eighth section, any person transporting cattle contrary to regulations made and published, shall pay a fine of five hundred dollars, or be imprisoned for one year; and the ninth section provides that whoever knows or has reason to suspect the existence of any such disease among the cattle in his possession, or under his care, shall forthwith give notice of the same, and the failure or neglect to perform this duty subjects the person to fine and imprisonment as in the preceding section. In the tenth section it is enacted, that any city or town whose officers shall neglect or refuse to carry into effect the foregoing provision shall forfeit a sum not exceeding five hundred dollars for each day's neglect; and the eleventh section all appraisals to be made in writing.

The second or supplementary Act is made up in fifteen sections. It authorizes the Governor to appoint two additional Commissioners, to act with those now constituting the Board; and provides “for the establishment of an hospital or quarantine in some suitable place or places, with proper accommodations of buildings, land, &c., wherein may be detained any cattle by them selected, so that said cattle so infected or exposed, may be there treated by such scientific practitioners of the healing art as may be appointed to treat the same.”

The Governor is authorized to appoint three competent persons to be commissioners to “attend at the hospital or quarantine established by the Commissioners, and there treat and experiment upon such number of cattle, both sound and infected, as will enable them to study the symptoms and laws of the disease, and ascertain, so far as they can, the best mode of treating cattle in view of the prevention and cure of the disease, and also to keep a full record of their proceedings, and report to the Governor and Council: the expense not to exceed ten thousand dollars. To prevent if possible, the transmitting the disease into other States, it is enacted, that “whoever shall drive or transport any cattle from any portion of the Commonwealth east of the Connecticut River to any part west of said river before the first day of April next, without consent of the Commissioners, shall be punished by fine not exceeding five hundred dollars, or by imprisonment in the

county jail not exceeding one year," and "whoever shall drive or transport any cattle from any portion of the Commonwealth into any other State before the first day of April next without the consent of the Commissioners," shall incur a similar fine and imprisonment.

If the provisions of these Acts are properly carried into effect, there is reason to believe that further progress of the malady can be checked. Referring to the merits of the law now to be put in force, the *Daily Advertiser* says:—

"The nature of the disease is not yet well understood, and provision is accordingly made for a scientific inquiry into its character by competent persons, with a view to ascertaining the proper course of treatment, prevention, and cure. It is doubtful whether the policy of indiscriminate slaughter can properly be carried any farther; and, accordingly, the plan of isolation is provided for, the necessary authority to seize cattle and take land is conferred, and the payment of the expenses of this plan of action is arranged."

*Preventive Measures in New Hampshire.*

At the opening of the New Hampshire Legislature last week, Governor Goodwin alluded to the subject in his message, and recommended that measures be adopted to prevent, if possible, the introduction of diseased cattle into that State.

We continue to hear favourable accounts of the crops from all the parts of the country. The hay crop, as we said in a previous number, will be light, and the straw short in some localities. There has been a deficiency of rain in some localities throughout the province, but complaint is by no means general, and in some localities they have experienced rather the reverse. In towns, generally, the state of trade has been, and still is at a very low ebb in spite of the flattering accounts which were studiously blown about the country recently. In the country, business is reviving, money is more easily collected than at the same period of last year, and a feeling of confidence prevails, and the ominous dispondency, so prevalent a few months ago, is disappearing. Yet few are disposed to adventure into any new business, and all are anxiously expectant on the fruits of a bountiful harvest. Storekeepers will be more cautious in granting credits, and all parties will be gainers by the change. Should we be favoured with an abundant harvest, we may fairly anticipate a large and profitable fall trade.

Large—but comparatively—on a healthy basis—for storekeepers by means of their receipts up to the period, will be enabled to clear off most of their existing debts before incurring fresh obligations.

The grain crops look healthy, and will turn out well if the remainder of the season prove favourable. The rains which have fallen have done great good. But we could take more, in this neighbourhood, with advantage. Wheat when not generally in ear till the middle of July, does not stand in danger of the fly after that period. It would be well to sow wheat at such a time as to insure its coming into ear either before or after the fly has left us. Our farmers should be especially careful in preparing their seed—taking care to free it of all seed weeds, as we are persuaded they too frequently sow down many varieties of weeds with their seed corn. Drill sowing has many advantages. If we introduce expensive culture, it will not pay to neglect the crops at any after period of their growth, otherwise we

shall sacrifice all our previous care and outlay. The improved system must be continued, in every stage, until the grain is brought to market, in order to reap the legitimate profit. We must be careful about our hay this season, as the crop will be short and dear. But a dry season is generally favourable to the wheat crop.

We refer our Readers to the "Transactions," appended to the "Journal," for information regarding the intended Agricultural Exhibition at Quebec, to be held in that city on the 18th, 19th, 20th, 21st and 22nd of August next. J. A.

### LITERARY NOTICE.

One of the most interesting and useful publications which comes to our sanction is the **SCIENTIFIC AMERICAN**, a weekly publication, devoted to popular science, new inventions, and the whole range of mechanic and manufacturing arts. The **SCIENTIFIC AMERICAN** has been published for fifteen years, by the well-known Patent Solicitors, Messrs. **MUNN & Co.** 37 Park Row, New-York; and has yearly increased in interest and circulation, until it has attained, we understand, nearly 30,000 subscribers, which is the best of evidence that the publication is appreciated by the reading public.

To those of our readers who may not be familiar with the character of the paper, we will state some of the subjects of which it treats. Its illustrated descriptions of all the most important improvements in steam and agricultural machinery, will commend it to the Engineer and Farmer, while the new household inventions and shop tools which are illustrated by engravings and described in its columns, with the practical receipts contained in every number, renders the work desirable to housekeepers, and almost indispensable to every mechanic or smith who has a shop for manufacturing new work, or repairing old.

THE **SCIENTIFIC AMERICAN** is universally regarded as the inventor's advocate and monitor; the repository of American inventions, and the great authority on law, and all business connected with Patents. The Official List of Claims, as issued weekly from the Patent Office, in Washington, are published regularly in its columns. All the most important Patents issued by the United-States Patent Office are-illustrated and described on its pages, thus forming an unrivalled history of American inventions.

It is not only the best, but the largest and cheapest paper devoted to Science, Mechanics, Manufactures, and the Useful Arts published in the world. **HON. JUDGE MASON**, formerly Commissioner of Patents, is not only engaged with the publishers in their immense Patent Agency department, but as a writer on Patent Laws and Practice, his ability is forcibly portrayed in the columns of this paper.

THE **SCIENTIFIC AMERICAN** is published once a week, (every Saturday,) each number containing 16 pages of Letterpress, and from 10 to 12 original Engravings of New inventions, consisting of the most improved Tools, Engines, Mills, Agricultural Machines and Household Utensils, making 52 numbers in a year, comprising 832 pages, and over 500 Original Engravings, printed on heavy, fine paper, in a form expressly for binding, and all for \$2 per annum.

A New Volume commences on the 1st of July, and we hope a large number of our townsmen will avail themselves of the present opportunity to subscribe. By remitting \$2 by mail to the publishers, **MUNN & Co.** 37 Park Row, New-York, they will send you their paper one year, at the end of which time you will



have a volume which you would not part with for treble its cost. The publishers express their willingness to mail a single copy of the paper to such as may wish to see it without charge.

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## FRIGHTFUL RAVAGES OF THE CATTLE DISTEMPER.

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ORIGIN AND SPREAD OF THE DISEASE, AND THE MEANS FOR ITS EXTERMINATION.

This disease has been known to be in existence in Massachusetts for several months. It is generally supposed to have been introduced here by some cattle imported from Germany, by Mr. Chenery, of Belmont, a town some five or six miles from Boston. From his herd a calf was sent into the town of North Brookfield, in Worcester county, and from thence the disease extended into some of the neighboring towns. The matter was brought before the Legislature at its late session, but the subject was so new, and a considerable portion of the members so much alarmed when-ever the words "treasury" and "dollars" were used, that no definite action was had upon it until the last hours of the session were passing away. In the meantime the disease was unquestionably making its silent progress in several ways, and the golden moment for suppressing it effectually was gone. It is possible, however, that the disease is epidemic, and that it will baffle all human foresight and skill to prevent its ravages. We hope not. But when we consider that it is communicated readily by association, and that almost universal changes are taking place in our neat stock at this season of the year, there is much ground, we must confess, for well-founded belief that it will cover the extent of New England.

Below we give an account of a visit of Gov. BANKS to the infected district, the examinations by the Commissioners, and the depressed state of feeling among the farmers, together with interesting incidental matters as reported for the *Daily Bee*.

"More than \$3,000,000 is invested in neat cattle in the State of Massachusetts. If this destructive disease should once spread over New England, millions of property must be sacrificed.

From the representations made by the Commissioners and others, Gov. Banks, on Saturday, April 21, visited the principal locality of the disease, and in company with the Commissioners and others gathered such information as they were able concerning the disease, the extent to which it has spread, what means will be required to check it, as will enable them to proceed with good judgment.

### *Principal seat and origin of the disease.*

As we have before stated, North Brookfield, on the high land in the western part of Worcester County, is the place where the ravages of the distemper have been most disastrous. It has, however, spread, as it is thought, into several of the adjoining towns, and it is not precisely known to what extent. It is quite certain that there are cases in New Braintree, Ware, South Brookfield, Rutland, East Brookfield, Barre and Oakham. This is a fine agricultural region, noted for its dairies and its excellent butter and cheese. The herds of most of the farmers are large, and many of them carefully selected from blood stock. The disease reached North Brookfield from Mr. Chenery's farm at Belmont. Curtis Stoddard bought a calf from Chenery's herd and took it home. It was soon taken sick, and not knowing of the disease, he took the calf to his father's Leonard Stoddard, to be treated. He was a very large farmer, trades cattle largely, and had on hand a large herd, to which the contagion was communicated. Once in this large herd, the distemper spread in all directions. Several of Mr. Stod-

bird's cattle were taken sick about two weeks after the calf was brought there, and in about ten or fifteen days died. This section of the town has become entirely depopulated of its cattle.

#### *The examination.*

The examinations made on Saturday were in this neighborhood—the first on the farm of Mr. Alden Olmstead. As we passed up the road, but few cattle were seen. Arriving at the farm of Mr. Olmstead they found a herd of fourteen, out of which two had already been killed and seven died. Besides these were four spring calves. The cattle were tied up in the barn awaiting examination. They were feeding, and, to the common observer, there was nothing particular indicating disease. Some of them stood with their backs slightly arched, and their heads drooping a little. What was more observable, on a closer examination, was a certain unnatural expression of the eye, which was slightly glazed and dull, as if the animal was suffering from pain. Otherwise the herd looked well, most of them in good order, and some of them, apparently, in perfect condition. They were all condemned.

The examination is made by sounding the lungs. This is done by rapping with the fingers on the ribs, just back of the withers and near the back bone. If the animal is untouched by the disease, they are resonant, but if the distemper has fastened upon them, they give back a dull sound. Some idea of the extent of these enlargements may be formed by the lungs of one cow, which should have weighed four pounds, but were so much enlarged that they weighed sixteen pounds, filling the cavity completely, and adhering to the pleura.

One cow was led out by the side of one of the "graves." By her stood a man with a sledge-hammer. A crack on the head brought the animal down, the throat was cut, and the hot blood poured into the pit. The surgeons laid bare the lungs and took them out. They were swollen, discolored, and in portions filled with pus, showing an advanced stage of the disease.

Another cow was taken up, in which the surgeons had not detected the disease after a careful examination, although she had of course been exposed. On taking out the lungs they were found comparatively healthy, but wanting in the natural *crepitus*, and with a slight discoloration on the edge, showing the incipient stages of the disease. This animal had a strong constitution, which had resisted the distemper thus far. Another had been attacked, but was thought by the owner to have recovered. The left lung was discolored, and adhered to the diaphragm, but the right lung, as is usual in cases of this kind, was badly diseased, having adhered to the sac. A marked case was a greyish cow which had produced two calves, twins, one of which had died of the disease. The cow was found to be slightly diseased, it having been transferred in a measure to the calves. When the calf was led along he breathed with difficulty, and on examination it was found to be a very bad case.

The Commissioners next proceeded to Mr. Leonard Stoddard's, the farm where the disease first was known. Three were killed here. They were all found diseased. This ended the examinations for the day.

The examinations and explanations by the veterinary surgeons were very minute, and the explanations intelligent. Everything throwing light upon the disease in its different stages of development was examined, and specimens of the lungs were reserved in nearly all the cases. Their investigations will throw much light upon the disease, and though they cannot aid in curing what is incurable, they will apprise the public of the dangers to be apprehended from it, and prepare them for some measures for its extinction.

#### *The number killed, their cost, etc.*

The method by which the Commissioners proceed is as follows: whenever there

As suspicion of disease they make examinations, and if they find disease the cattle are condemned to await slaughter, under their supervision. In cases where they have reason to suspect the cattle have been exposed, while they are not certain of disease, they issue a process by which the stock is put in "arrest"—that is, prevented from mixing with other cattle.

The whole number which have been put under arrest, together with those killed, up to Saturday night, is about *eight hundred head*.

The value, as by appraisal of those actually killed up to Saturday night, is \$3,780.

The following table exhibits the names of the persons whose cattle have been condemned, showing also the original number of their herds, the number which the Commissioners brought for preliminary examination, the number which have been killed. It is taken from the books of the Commissioners :

	No. Herd.	Bought.	Died.	Killed.
O. P. Huntington.....	22	3	8	11
Alden B. Woods.....	27	1	5	21
A. A. Needham.....	37	2	7	28
A. Olmstead.....	21	2	7	12
L. Stoddard.....	62	1	13	10
	169	9	40	82

*Incidents, Rumors, etc.*

It is hardly possible to convey an impression of the feeling which exists in North Brookfield and vicinity. The western part of Worcester county is as much affected by such a calamity as any section of the State could be. The beautiful town of North Brookfield has thus far suffered the most, but unless the scourge is arrested other towns will suffer equally. It is the chief subject of conversation among all classes of people. As one result of the disease, no milk, butter, cheese, veal or beef is taken from the Brookfield stations, unless after the most rigid investigation into its antecedents. It will be a long time before the reputation of the region will be recovered.

One man named Meade is of the opinion that it was communicated to his cattle by means of his clothes. He says he was at Stoddard's, and among his cattle, and after he went home his calves came around him, smelt of his frock, and were soon attacked. It is said, however, that his cattle and some of Stoddard's were at same time together. There was a report that the distemper had appeared in Ware, having been conveyed in some hay sold from a barn in North Brookfield, in which were infected cattle. The Commissioners, determined to take every precaution, will probably prohibit the sale of hay from infected barns. At the close of the examinations on Saturday, the Commissioners requested the people from the adjoining towns to change their clothes before going into their barns.

*Is the meat poisonous ?*

This is the question in which all consumers of beef, milk and butter are interested. Up to a certain stage of the disease the meat is not injurious, though the Commissioners have prohibited, entirely its sale. In European countries the sale of the beef of animals suffering with this disease is legalized. There is no virus introduced into the system, and the meat is only injured from the blood not being purified by the operation of perfect lungs.

*Description and symptoms of the disease.*

The locality of the disease, as its name denotes, (pleuro-pneumonia) is in the lining membrane of the thoracic cavity, and in the thoracic viscera. It is pro-

table that the disease is really a disease of the lungs merely, and that the pleura or contiguous membranes are affected merely by sympathy. If an autopsy be made of an animal suffering from the disease, the cavity of the chest is discovered to contain a quantity of diseased serum, the effusion of the affected pleura; and the lungs are seen to be solidified, filled with lymph, and of the dark color of venous or unoxigenated blood, instead of being porous and of a pink color. From this solidification and the dark color, physicians have agreed that the lungs do not act naturally in the elimination of carbonic acid and the absorption of oxygen into the blood, and as by degrees the blood gets poorer and poorer, has less and less vitality in it, the animal must die, just as a man must when shut up with a pan of charcoal in a close room.

It is only recently that this disease has been introduced into this country, it having come over, without doubt, with some "improved stock;" but the fearful ravages it has already caused here and in New Jersey leave no room to doubt that it is highly infectious, and the experiments in inoculation made in Europe lead us to suppose it is contagious also.

This disease supposed to have originated in the Netherlands, was probably introduced into this country by Dutch cattle, but has been known for a century and a half in England, France and Germany, in which latter country the government have adopted the most energetic measures for its extirpation.

Paoli Lathrop, Esq., one of the Commissioners upon the cattle disease, accompanied by Drs. Bates and Thayer, visited Belmont on Tuesday, 24th to ascertain whether the disease had made any progress in that vicinity. They thoroughly examined the herds of Messrs. Adolphus Brown, S. Kendall, James B. Kendall, M. W. Marsh and George Prentiss, and found them entirely free from disease. Most of the animals were in very fine condition. It is a singular fact that one of the above herds run in a pasture beside that of Mr. Chenery, where the disease originated. Yet no disease had appeared among the animals. The result of the observations of the Commissioners in this respect is that the disease is not conveyed in the air. It is contagious, and not epidemic.

The farm of Mr. Chenery was also visited. There were no new cases of the disease. Mr. Lathrop commends Mr. Chenery for the precautions which he has taken since he became aware of the dangerous character of the disease, to prevent it from spreading.

Hon. Amasa Walker, another of the Commissioners, made a further examination among the herds in Brookfield, but found no new cases.

A meeting of the Commissioners and surgeons was held at the State House on Wednesday. The appropriation of \$10,000 is considered too small by some \$5,000, and measures were taken to raise a guaranty fund, to secure the required amount. We are informed by Dr. Dadd, that the Commissioners are satisfied that, with one exception, the disease is confined to North Brookfield, and that the evil may be eradicated by the slaughter of the infected herds, and the adoption of the proper precautions. The reports of the disease having appeared in New Hampshire are considered unfounded, and the disease in Essex County was entirely different from pleuro-pneumonia.

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### THE PLEURO IN NEW-JERSEY.

Mr. D. B. Logan writes to the *Tribune* as follows, under date of Morristown, N. J.

I was present to-day at an examination of two animals that died of pleuro-pneumonia.

The disease is at Chatham, about eight miles from this place, and at Newark, on the farm of Abram Johnson.

The history of the disease at these places, as near as we can learn, is this. During the summer of 1858, Mr. A. L. Jacobus bought some twenty young cattle in New York, which he brought home, and turned into pasture, some three miles from Chatham. It was about three weeks after when Mr. J. again saw them, when, to his surprise, he found two dead, and two or three others sick. They were at once placed in separate pasture, and none of these have since had the disease. During the same fall, Dr. Munn of Chatham, bought three heifers from this lot of healthy cattle, yarding them with his other stock. Soon after which the disease made its appearance among some of his older animals—four dying very soon after, and others taking the disease, but recovering.

From Dr. Munn's yard it was communicated to that of Mr. Lum, by driving a cow there, where she remained but a short time. Mr. Lum has since lost six cattle; four others which had the disease, he thinks have recovered, and one is now suffering from it, but with a prospect of recovery.

From these yards it spread to six others—each of them losing from one to five animals—making twenty-four deaths in all in this place. There are now but two cases in the place: and it is hoped that with proper care, it may be confined to them.

The cases at Newark are also traced directly to cattle brought from New York. Mr. Abm. Johnson, a farmer and dairyman, living about one mile from Newark, on the road leading to Elizabeth, bought in Browning's yards in New York, about the 20th of December last, six spring calves, and took them to his farm, where he then had some sixty head.

About six weeks after receiving these calves, one of them was taken sick, refused its feed, and showed all the symptoms of the disease as it exists in Massachusetts. After lingering about two weeks it died. Two weeks after, a cow was taken in the same way; she also lived for about two weeks. About three weeks after three others took it, and now cases have been frequent up to this time. Mr. Johnson has lost four animals, has had five cases which he thinks have entirely recovered, has now five sick, and one was killed to-day for examination, making fifteen cases in all on his place. Early in May of this year Mr. Johnson sent forty-two head of his cattle, including the five remaining calves from Browning's yard, to Newfoundland, Morris Co., to pasture for the summer. At that place there were large tracts of uninclosed lands, on which large numbers of cattle were pastured during the summer, and these cattle it is feared, may, by coming in contact with hundreds of others, spread the disease over a wide extent of country. Mr. Johnson, at the time of sending these cattle to pasture, was not aware of the nature of the disease, and has not since heard of them.

I was present to-day at an examination of two animals on his place—one a bull that died yesterday, the other a cow killed to-day, for purpose of examination. The autopsy was conducted by Dr. C. C. Gryce, V. S., of New York, in presence of Drs. George A. Quimby and Woodruff of Morristown, and Drs. Ward and Peek of Newark. Gov. Olden of our State, Mr. Halstead, President of the State Agricultural Society, A. M. Tredwell, Esq., of Madison, Benjamin Haines, Esq., of Elizabeth, and some twenty other gentlemen, principally interested in stock raising, were also present. The bull that died yesterday was the first examined, and after him a cow that had been sick one week. Both cases every indication of the disease existing in Massachusetts, and were examined by Dr. Gryce, as well as the medical gentlemen present, unmistakable hydro-pneumonia. The cases examined at Chatham presented the same strong proof, and we are too well satisfied that we have the dreadful disease in our midst.

## DO ANIMALS CONSUME FOOD IN PROPORTION TO THEIR LIVE WEIGHT?

We have always taken the affirmative side of this question, although we are well aware that the opinion of many intelligent farmers is against us. Thus JOHN JOHNSTON, whom we all delight to honor as a farmer of great experience and sagacity, writes to the COUNTRY GENTLEMAN :

"It takes no more feed to fat a lot of sheep averaging 140 or 150 lbs, than it does the same number averaging only 85 or 90 lbs; therefore, it is more profitable to feed heavy sheep than light ones."

If Mr. Johnston simply means by this that the same quantity of food will produce more mutton when fed to heavy than to light sheep, we believe he is right. But if he means that a lot of—say 20 sheep, averaging 140 or 150 lbs, will eat no more food per day than a lot of 20 sheep averaging 85 or 90 lbs, then we believe he is mistaken.

The most reliable experiments bearing on this question are those of Mr. Lawes. These experiments were made to determine the "comparative fattening properties of some of the most important English breeds of sheep." The breeds selected were the Sussex Down, the Hampshire Down, the Leicester, the Cotswold, and half bred wethers and half-bred ewes.

The Sussex Down, which was brought to great perfection by the labors of Ellman, is a very small sheep, with short very compact wool. This breed is admirably adapted for upland and scanty pastures, where larger breeds would starve. The mutton commands a higher price in London than that of any other breed.

The Hampshire Down is a larger and coarser breed.

The Leicester, brought to such perfection by Bakewell, is, when pure, larger than the Sussex Down, but not quite so large as the Hampshire Down. Contrary to the generally received opinion in this country, it is really a small breed; it yields a large quantity of long wool, and, in rich pastures, possesses a great aptitude to fatten.

The Cotswold is one of the largest breeds of sheep. The wool is very long and of good quality. The mutton is of rather inferior quality, but the Cotswold fattens so rapidly that it has not inappropriately been termed "the poor man's sheep."

The half-breeds used in these experiments were a cross between a Leicester ram and a Sussex ewe.

The sheep for these experiments were selected by good judges, from the best flocks in England. Mr. Lawes says:

"Letters were written to breeders of eminence (those being generally selected who had obtained prizes for their sheep,) requesting them to select 50 wether sheep, born the same year, and representing fairly the breed required for the experiment. No limit was set upon price. The sheep were sent about the month of September to the farm, and they were kept upon ordinary food until the middle of November. At this time the sheep were about nine months old, having been lambed about the February preceding."

At the commencement of the experiment in November, the sheep being about nine months old, the 50 Cotswolds weighed on an average, 119½ lbs; the Hampshire Downs, 113½ lbs; the Leicesters, 101 lbs; the half-bred wethers, 95 lbs; the half-bred ewes, 91 lbs; and the Sussex Downs, 88 lbs. each.

The experiment lasted from five to six months, the sheep being weighed at the end of every four weeks. The quantity of food consumed was accurately ascertained.

The following table shows the average amount of food consumed weekly by each sheep :

	Oilcake. lbs. oz.	Hay. lbs. oz.	Turnips. lbs. oz.
Cotswold .....	8 1	6 14	113 4
Hampshire .....	8	7	106 10
Leicester .....	5 14	5 9½	83 12
Half-breed wethers.....	5 14	5 9½	82 14½
do ewes.....	5 9½	5 4¾	78
Sussex.....	6 3	5 14	79 1

The average rate of increase per head per week was :

Cotswolds.....	3 lbs. 2½ oz.
Hampshire.....	2 " 12 "
Sussex.....	2 " 1¾ "
Leicesters.....	2 " 1 "
Half-breed wethers.....	1 " 14 "
do ewes.....	1 " 13¼ "

By ascertaining how much water there was in the quantity of food consumed by the different breeds, we are enabled to see exactly how much *dry food* was eaten. This was done. Then, by taking the weight of the sheep at the commencement and at the end of the experiment, we are enabled to determine their mean weight. Thus, if a sheep weighed 100 lbs. at the experiment, and 150 lbs. at the conclusion, we should call its mean weight 125 lbs. Now if this sheep eat 3 lbs. of dry food per day, we say that the amount of food consumed by 100 lbs. of live weight would be 24 lbs. per day. (If 125 lbs. eats 3 lbs., 100 lbs. will eat 24 lbs.) Knowing the weight of the sheep, then, at the commencement and at the end of the experiment, and also the quantity of total food consumed (and the exact quantity of dry matter which it contained,) we are enabled to calculate how much 100 lbs. of live weight of the different breeds consumed of dry food per head per day. The result was as follows :

Cotswolds.....	2.16 lbs.
Hampshire.....	2.01 "
Sussex.....	2.01 "
Leicester.....	2.15 "
Half-breed wethers.....	2.02 "
do ewes.....	2.03 "

In commenting on these figures, Mr. Lawes remarks :—

"Although there is a general impression among agriculturists that large sheep eat proportionally less than small sheep, it is evident that *equal weights of sheep consume equal amounts of food*"

#### LOIS WEEDON SYSTEM OF WHEAT CULTURE.

The May no. of the London *Farmer's Magazine* has an article on the "Principles of Manuring," introductory to which the writer gives the following concise view of the system of growing wheat *without manure*, practiced for years by Mr. Smith at Lois Weedon :

As a means of illustrating both the principles and practical bearings of this celebrated controversy, it is impossible to select a more apposite, instructive, or important instance than that represented by the well-known agricultural triumph in successive and un-manured wheat-growing achieved by the Rev. Samuel

Smith, at Lois Weedon. The manner of his yearly cultivation is as follows: At the usual time in autumn, the seed is drilled into stripes, which (consisting as each set does, of three rows, ten inches apart) occupy thirty inches in width, and between strip and strip, there is left an unseeded space of similar dimensions. During the growth of the plants in the ensuing season, the rows receive sedulous attention in hand-hoeing; while, at the same time, the interspace between strip and strip undergoes a constant succession of horse-hoeing and other fallow operations. Next year these fallowed spaces bear the stripes, and the stubble of the preceding year's crop is plowed up and summer-fallowed in like manner. In one point of view, there is a perfect analogy between this expedient and a practice not uncommon on the heavy land of Essex, in which is pursued field by field the simple alternation of corn one year and fallow the next, to be again succeeded by corn, and so on for ever; but in various circumstances of detail, into which we shall not here enter, the Lois Weedon method possesses a superiority very favorable to both healthy and prolific cereal productiveness. M. Smith's experience in this mode of management dates back to the year eighteen forty-six. The area of his operations is comparatively small, being only five acres. The soil is above average quality, and consists of a staple of good wheat land, resting on wholesome clay, and naturally dry. The implement used for inverting the soil is the spade, or fork, in place of the plow. The average yearly produce for twelve years, ending with crop 1859, has been upwards of thirty-six bushels per acre of prime marketable wheat; and the expense of tillage, rent, &c., are as follows;

	£	s.	d.
Digging and cleaning.....	1	14	0
Horse-hoeing, three times.....	0	6	0
Plowing.....	0	4	0
Hoeing and hand weeding.....	0	5	0
Three rollings with crushers at seed time and at spring.....	0	3	0
Two pecks of seed.....	0	2	6
Dibbling.....	0	5	0
Bird-keeping.....	0	4	0
Earthing up wheat.....	0	3	0
Reaping, &c., trashing and marketing.....	1	13	0
Rent £2, rates and taxes 4s. 3d.....	2	4	3

Total yearly expenses..... £7 3 9

Value of thirty-six bushels of wheat at an average price of 6s. 6d. per bushel..... £11 14 0  
 Deduct expenses as above..... 7 3 9

Annual profit per acre besides the value of the straw, £4 10 3

One other element of Mr. Smith's practice still remains to be stated, (and on account of its paramount importance it has been reserved for special notice,) namely this, that in each summer fallowing of the interspaces a method of deep cultivation is pursued, by which the upper and lower strata of the staple are stirred, and inverted to the depth of ten or eleven inches; and if it be asked upon what grounds was this trenchant and very thorough tillage resorted to, the reply is, because theory and practice alike assured the experimentalist—1st, that usually in the soil, and ever in the air, there is abundance of nutriment for cereal crops, in proportion as the mineral and atmospheric elements are brought into mutual reaction within the pores of the soil, by perfect tillage, the aid of additional fertilizing substances is not indispensable to the profitable growth of corn.



In point of agricultural importance, no circumstance belonging to the present century is more entitled to deep consideration, than this brilliant, yet sound instance of tentative husbandry; nevertheless, in order to appreciate its true practical value, it is necessary to bear in mind, that as respects the happy combination of operative details of which it is made up, it consists of no principle or expedient in cultivation which had not been known before. As an example of cereal productiveness, procured without the intervention of cattle crops, what other unalternating system than this prevailed in England, when, prior to the introduction of roots and clover in rotation, she not only fed her own population with corn, but exported it largely to foreign parts? Nay more—what other than this, is the still existing policy in the cereal countries of continental Europe, which now so largely provide England with breadstuffs. As for the *interculture* of the Lois Weedon method, admirable and efficient as the expedient is, it can be regarded simply as an adaptation to corn tillage of that method of drill husbandry hitherto confined in general practice to the fallow crops only; while finally, the deep working, if not so generally prevalent as it ought to be, has long existed in many of the best-farmed districts of the island.

Now, the moral we wish to point out, in the foregoing statement, is this—that, from the case where, under sunny skies, and on a rich soil, the lazy husbandman has only to scratch with a little covering of earth over his corn seed to produce an abundant crop, up to the elaborate process of Lois Weedon experience, there is every variety and degree of evidence to show that wheat or any other kind of grain can profitably be raised by the power of tillage alone, and that the use of manures, whether obtained from the cattle crops of modern rotation husbandry, or from external resources, is not indispensably necessary to profitable cereal husbandry. Nay, more—from the practice of all nations it is deducible, that in proportion (within certain bounds) to the greater depth to which a soil is stirred, and to the perfect annual tillage it receives, the produce of that soil will be more abundant.

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## REFUSE TAN, OR SPENT BARK.

This article can be had at almost every village without money, or for a mere trifle in the way of compensation. In some instances the tanner would be glad to have it taken away. The question has been asked by one whose teams returned, from an adjacent village, empty, a great times in a year, "Would it be worth the time of loading and unloading to stop at the tannery and get a load of spent bark, now and then?" Our answer was a pretty confident yes, and the following were the principal reasons alleged in support of it:

1. Among the various *uses* of refuse tan, none, perhaps, is so generally known as its power to absorb the urine or other liquids of stables or yards. A considerable amount of fertilizing matter may thus be saved by using tan as bedding for hogs, for cattle and cows, and for horses, or even perhaps in sheep-yards and under sheep-sheds. In the volumes of the *Co. GENT. and CULTIVATOR*, 1853, Mr. G. W. DURANT gives some account of his manner of using tan bark as an absorbent, and as litter for various kinds of stock. He says that he has been in the habit of employing about one hundred loads in this way every year. In the beginning of summer, for example, he puts a load or two in his hog-yard, and when that is used up (thoroughly saturated,) he puts in more, making his yard so tight that no liquid can escape. All along until winter he endeavors to keep his hogs dry by filling in fresh tan-bark. He lets these yards be undisturbed until spring, when he carts out the manure thus made on his corn ground. "It has all the

effects of pure hog manure, which is said to be the best manure we can get for that crop, and produces pumpkins in a wonderful manner."

The way in which Mr. D. uses tan-bark in his stables is as follows:—To a span of horses he puts in a load as bedding, or enough to cover the entire floor eight or ten inches deep. This is forked over every day for ten or twelve days, and then carted out and put in piles, or heaps, fresh bark being supplied in the stable. This method is pursued until hard, frosty weather prevents its being used as bedding, when straw is substituted. The manure or compost thus made, he applies to his carrot ground or garden. The urine of the horses has the effect to turn the bark black, and seems to rot it very quick. He mentions as an illustration of this effect, that a pile made in the spring could not be distinguished from clear muck when carted out for wheat in September. Mr. D.'s mode of using the bark for stabling cattle is nearly the same as with horses. He covers the floor about six inches deep with the bark, which, he remarks, makes a nice, clean, soft bed for them, and has the stable cleared every morning of all that gets wet, and the remainder levelled off. This method of bedding cows and cattle is employed except when frosty weather prevents. M. D. also fills up his cattle-yard occasionally in the fall and during the winter, with bark sufficient to keep them dry, and so also during the summer, he spreads a few loads sufficient to keep the cows that are yarded over nights, dry and clean. The compost or manure thus made is occasionally forked over, and then carted out in September for wheat.

Probably the chief reason why spent bark is so little valued is on account of the slowness of its decomposition. The foregoing mode of employing it indicates one way in which this objection may be obviated, or by which the decomposition of bark may be accelerated.

2. But even in its undecomposed state bark may be employed with advantage to some soils—chiefly to tenacious, cold clays. Applied to these it acts mechanically, and must serve to make them somewhat more friable. For such soils tan might even be of more advantage than manure, in many cases acting mechanically to loosen and lighten up the soil while it remains undecomposed, and at the same time giving out some fertilizing elements during its slow decomposition. In order to secure the fertilizing qualities of the spent bark more speedily, some tanners, we have been informed, burn it and apply the ashes to the land. The method employed by Mr. DURANT is, however, far more economical, as a rich compost is thereby secured.

As some have a fear that tan in its undecomposed state would be likely to prove injurious to land, perhaps the best way of using it, even for clay soils, would be to have it, at least, partially decomposed, either by urine or the liquids of a yard, or by mixture with lime or ashes. Either partially or wholly decomposed it will make heavy soils lighter, and tenacious soils more friable.

3. Spent tan is certainly *useful* as a *mulch* in almost all cases in which *mulching* is expedient.

4. Spent tan is useful as a direct *fertilizer*. It contains several earthy and saline ingredients useful and necessary in the growth of plants.

5. It is stated in the *Farmers' and Planters' Encyclopedia*, that refuse tan is useful occasionally as a top-dressing on some grass lands, in a half putrified or even fresh state.

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#### PREPARATION OF BONES BY PUTREFACTION.

We give the process of preparing bones which consists in causing putrefaction and decay as given by Mr. Tyson, the State chemist, in his late report to the Le-

gislature of Maryland. We have given heretofore the process of dissolving the bones in sulphuric acid, and their mode of application. Mr. Tyson, however, deems the increased expense of the preparation by means of the acid as an objection to their use, and less advantageous than the putrefactive process, and gives some proofs to satisfy himself of the correctness of the theory advanced. Mr. Tyson says :

"There are three modes of applying crushed bones to the soil—1st, In the dry state, as purchased—2nd, Dissolved in sulphuric acid—3d, Causing an incipient decay, or, more correctly, putrefaction of their animal matter." After presenting his views upon the two first mentioned modes, he adds :

"It remains now to notice the third mode of preparing bones, which consists in causing putrefaction and decay. "This mode has been evidently coming more into use within a few years past, and we often find directions in the agricultural journals for effecting it, most generally by making them into composts with stable manure or other matter. I have, however, met with nothing in that way that appears likely to answer a better purpose than that practised by me 19 years ago, after experimenting to some extent. And as inquiries have been made in answer to which I have found it necessary frequently to describe the process, it will now be repeated in full.

"Having smoothed over the surface of the ground, (under a shed, if convenient, place thereon evenly, a layer of 3 inches of ground bones, and then an even layer of good fine soil or earth free from stones or sticks. Give a good sprinkling of gypsum over each layer of earth. Another layer of bones is applied upon the layer of earth, and the same alternations are to be repeated with the gypsum until we have four of each, bones and earth, and the height of the pile will be 24 inches. As the bones are usually dry, each layer should be well moistened with water, or better with urine, in order to hasten the process. It is proper to place two or more sticks in the pile reaching to its base, which should be frequently examined by feeling them in order to judge of the degree of heat produced. If the weather be warm they will begin to heat in a few days, and in a week or two will become hot. When upon taking out the sticks they feel unpleasantly hot, the process should be checked by chopping or spading down the mass from top to bottom, which, if carefully done, mixes the material well together, and they are ready for spreading.

"If the process be commenced during cold weather, it may be hastened by placing at the bottom a layer of fresh horse dung about 6 inches thick, and covering the pile with straw or fodder to retain the heat.

"There is much testimony in favor of using salt as a manure, and it cannot be applied more advantageously than with the bones, because it promotes their solubility. It would be better to place the proper dose of salt with the gypsum upon each layer of the earth.

"In reference to the quantity of bones to the acre I must say that after trying them in quantities from 30 bushels down to 10, I came to the conclusion that 10 bushels to the acre was the most advantageous quantity. I became satisfied also that this quantity, prepared as I have just indicated and uniformly sown, will be as effective for a year or two as double the quantity applied in the dry state.

"Should the soil be dry when wheat ground is dressed with dry bones and continue so for some time after, but little effect will be produced by them upon the autumn growth.

"The effect of putrefied bones will be obvious within a few days after the young wheat appears above the surface. The putrefaction in the first case goes on very slowly ; but when the bones have been once heated it will proceed more rapidly and of course furnish an earlier supply of the much needed ammonia, as well as phosphoric acid.

“ One great advantage of bones over ammoniated guano arises from the fact that putrefaction and decay have progressed in the latter until nearly all the ammonia which they are capable of yielding has been all ready formed. And as it is very soluble in water, much of it is rapidly washed off during heavy rains, leaving a portion which is absorbed and retained in the soil. This is going on whenever the ground is wet, so that when the soil is not frozen in winter, the ammonia is passing off and there is no crop growing to appreciate it.

“ When the bones are applied, either dry or in the manner I have suggested, they are giving out their ammonia as the crop requires it, but in cold weather the putrefaction is nearly or quite suspended according to the temperature and again resumed in the spring, at first slowly, and then rapidly in hot weather, when it is most wanted by the crop.

“ I have already met with those who have used bones for manures without being satisfied with their effects. Experience has shown, however, that their effects are not so promptly evinced in stiff clay soils as in those of a more porous character. The compactness of very stiff clay soil prevents sufficient access of air to assist in the decay of the bones. When applied to very wet soils, the animal matters decompose so slowly as to produce little benefit to crops.” [Baltimore (Md. Sun.)

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**THOROUGH CULTIVATION MOST PROFITABLE.**—The following practical illustration of the value of the thorough tillage of a small farm in opposition to the common practice of cultivating superficially a larger tract of land, is taken from the Homestead, and is worthy of attentive consideration. It is an admirable instance of judicious calculation and management.

The writer purchased a farm of 60 acres ten years ago. He immediately sold 30 acres of the less valuable portion, and with a part of the receipts from this sale, he underdrained and subsoiled 12 acres of that which he retained. The soil is a gravelly loam and dry; but he drained it, he says, to make it wet, and succeeded. The whole of the manure from the barn-yard went to enrich these 12 acres, and now the land is really good. The second year after he came into possession, his crops from these 12 acres were more than double the produce taken by his predecessor from an average of at least 30 acres annually devoted by him to cultivation, while the quality of his products was 25 per cent. better than they had ever been. Off one acre and a third, he took four tons and three quarters of clover hay. Though the land was previously in good heart, having a chance of obtaining six cords of manure from a blacksmith's shop, he top-dressed the clover with that, and with a barrel of plaster besides. He keeps in better condition as many cattle as his predecessor, and intends to break up three acres more next spring, underdraining and subsoiling at the same time. The writer adds, with emphasis:

“ I believe in a little farm well tilled; too much territory is the greatest evil farmers have to cope with. This truth is seen every day; let us mend the matter.”

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### FORK VS. SPADE.

The time-honored spade is falling into disuse. Look at yonder son of Erin, as he drives the shining blade into the moist loam, and heaves out a square compressed mass, two sides of which are smooth and compressed as possible. If you are standing near or working by his side he will hit it a rap and crumble the top of it a little, while the mass probably remains intact.

The ground will be leveled off with a rake, and the lumps will bake slowly, and remain likely enough hard and impervious all summer, if the ground is not deeply worked again. When spading is done in very dry weather, it is not liable to the same objection in degree, yet it leaves the soil always more or less lumpy.

How different is it with the use of the fork. The spading fork is found of various forms in the shops. We prefer one of narrow tines, rather long and very thick, made of good steel. A good quality of steel is very important, for often a single tine striking a stone or stick has to take instantly the whole force of the blow or shove. The tines should be thick, a considerable prying power is often required: and they should be narrow, that the earth may be no more compressed than is necessary.

As a fork like this may be driven much deeper with the same force, it will lift the earth quite as well as a spade, and without packing it. If roots of trees, bulbs or anything of the kind are present, there is little probability that they will be injured, if care is used and the ground may be loosened sufficiently in many cases without lifting the earth at all, in a way to bear the roots.

The fork in fact may be used wherever the spade can be, and a shovel is not more desirable,—we do not claim for its superiority in shoveling sand or gravel, and it may be used in many places where a spade cannot be used. About trees, in raspberry, current or vine borders, especially, will the fork be found of incalculable service, and the spade should be banished forthwith.

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### FRUIT PROSPECTS.

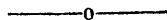
The past winter has been very severe upon fruit trees in this vicinity. Some old pears, which had successfully resisted four or five score winters, are entirely dead, and young pear trees of from ten to fifteen years are very generally killed down to the snow line, and some entirely. We used to think that the danger of winter-killing was nearly over with pears when the trees were old enough to have rough bark; but last winter has destroyed such trees, and left young newly-planted dwarf-pears comparatively untouched. Indeed, probably the only way to have pears in this climate at all is to plant dwarfs and keep them almost as low as gooseberry bushes.

Apple trees, though not so much affected as pears, have also suffered very sadly—some being wholly dead, others partially dead, and many in such a sickly state as scarcely to be able to put forth foliage: the pomme grise suffered especially. The immense show of blossoms on all kinds of apples partly accounts for the feebleness of the foliage—and the sharp frosts on the 20th of May, which scorched the blossoms, may also have had some effect upon the leaves. This frost, it was feared, might so injure the blossoms as to render them sterile; but we see plenty of fruit set upon some trees, though it is doubtful if those trees, or portions of trees, which are sickly, will bear fruit. The apple caterpillar has been abundant in the orchards this season, though it has not spread as in the other seasons to the forest trees. The frost did it no harm.

Small fruits have neither suffered from the winter nor the May frost, unless it be raspberries, which are rather sickly in some gardens. Gooseberries look remarkably well, though the late frost caused a considerable proportion of the fruit to fall. The gooseberry and currant caterpillar has scarcely made its appearance this spring in some gardens which used to be badly infested. Perhaps the frost destroyed it.

This frost to which we have alluded, besides killing the potatoes, corn, and other tender vegetables, which were above ground, destroyed all young leaves

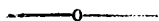
and shoots of some kinds of garpe vines. The Diana, Concord, and Delaware lost their young shoots entirely, though they are again putting out new buds; the Catawba and Isabella did not appear to suffer. An American chesnut, which for six years has appeared well adapted for cultivation here, had its young foliage killed by the frost, as did some common trees of this country; but they are all sending forth new leaves again.—*Montreal Witness.*



THE STRAWBERRY. Mr. R. G. Pardee, of New York, in a lecture at Yale College, on the strawberry, says:

The following, to cultivate that fruit, is the best method: Select a warm, moist, but exposed situation; for early berries let it slope to the east or south; for late ones to the north. The soil should be a fine gravelled loam. Avoid high, barren soils, and those which are wet. To prepare the soil, make it clean; underdrain, leaving the drain open at both ends, to allow the circulation of air. Pulverize at least two feet in depth, making ten per cent of the soil as fine as superfine flour. For manure, apply thirty bushels of unleached ashes and twelve bushels of lime slacked with water, holding three bushels of salt in solution to the acre.

Transplanting should be done with great care, and the rootlets of the plant injured as little as possible. The best time to transplant is in the spring, though, with care, it may be done any time during the summer. The lecturer said he would, in starting a new bed, place the plants three feet apart. Water may be added with great advantage, in large quantities, except during the flowering and ripening periods, provided always it does not stand and become stagnant on the soil. The hoe should never be used about the plants, as it injures the roots. The productiveness of the strawberry about New York does not average more than forty bushels to the acre. There is no difficulty in raising one hundred and fifty bushels under the cultivation recommended. In the winter the plants should be highly covered.



### ALFAREA GRASS.



This native grass, like the bunch grass, is certainly better adapted to our dry climate than alfalfa. We do not believe that it has a superior for stock feeding. It grows luxuriantly on side hills, where alfalfa fails for want of moisture. So far as we know, alfarea has not been sown and cultivated. We suggest that our farmers make experiment with it. It supplies plenty of seed. Though we have not seen it cultivated intentionally, we have noticed it in considerable patches in cultivated ground, where it is looked on as a weed. The wild alfarea of the plains and mountains appears to the eye like a flattened tuft, scarcely giving a fair hold to the bite of cattle. This is a deception; for if you gather it up with your fingers, so as to elevate it to its full height, you will find that it makes a great mouthful. In cultivated gardens, as we have said, we find it makes most luxuriant growth. We know no grass that can beat it there for weight of crop, and certainly it cannot be excelled for exuberance of succulent juices.

The State Agricultural Society may do a great public good by offering a premium for the largest and best crop of alfarea grass, and another for the best exhibition of alfarea hay.

It may be noted that alfarea pasture is gradually being killed out in California by too close cropping. This remark applies to the wild oats and the burr-

clover pastures. We cannot rely, from year to year, as we have done, upon abundance of free pasture, cattle are allowed to roam without check, and they leave no grain or seed for the fall and winter rains to fructify for the renovation of the pasture. There is no remedy for this evil. But it becomes imperative that cattle men look to the devastating effects it is going to produce, and prepare to meet the consequences. In the enclosure of lands, and the cultivation of suitable grasses to the different localities, will be found their only salvation; and to this warning we draw their earliest and most earnest attention.

Next to vegetable gardening, the land in the vicinity of our cities cannot be better employed than in raising grass. The most profitable way of disposing of this crop will be to feed it on the ground, and return the manure to the soil. We do not mean to pasture it, which is too wasteful on expensive grounds. We mean, to cut it and feed it, whether green or dry, to cattle so enclosed as to save the manure. When cattle are driven to town for sale, either for the shambles or for stock growers, we want better provision for their keeping while they remain. In this we are greatly deficient.

We know of no grass better suited for the purpose than alfalfa. It will bear a luxuriant crop over our rolling lands, and on our hill sides. It will do as well on sandy land as on any other, and we believe no land will better repay good cultivation.—*California Farmer.*

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### MANAGEMENT OF MANURE.

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The progress of improvement in the agriculture of any country is indicated by the attention that is paid to the collection, preservation and application of manure. The wonderful change that has taken place in the British husbandry was ushered in by attempts to enlarge the quantity and improve the quality of manure. Every kingdom of nature has been ransacked to find out substances endowed with the principles of fertility. Science has come to the aid of art; philosophy has stooped from her dignity and joined in the research, and the public mind appears to be fully aroused to still more adventurous efforts. The formation of compost middens, the mixture of soil with decomposable matter, the universal application of lime, the construction of liquid manure tanks, the introduction of guano, burnt clay, bones, plaster, &c., are all steps in the great race in which intelligent agriculturists have been and are engaged. Unless such means were resorted to, Great Britain could not sustain her dense population. Without the greatest economy of manure, the millions of China would starve.

The continued production of grain crops will exhaust the most fertile soil, unless rest is given and manure applied. It has been proved and acted on in Belgium and England that a farm may be kept in good heart and subjected to a continued course of cropping without other manure than that which is made on the premises, from the consumption of green crops, hay, straw, &c., and the proper management and application of the solids and liquids which are thus obtained.

In new countries, such as the United States and Canada, where rich land is easily obtained and labour scarce, manure is neglected, and when the soil is impoverished by continual cropping and the rapid increase of weeds, fresh locations are sought, and the worn-out soil abandoned; but when all the land becomes occupied this system must be changed and manure and rotation of crops called in to the aid of the farmer.

Few persons in a new country are sufficiently careful of manure. Sometimes it is spread on the green sward, sometimes permitted to remain lying round the barn yard for two or three seasons. The liquid which exudes from it is not economized. The exhalations which arise from the ardent influence of the summer's sun, and from the natural activity of fermentation are permitted to escape and carry away with them the most valuable part of the manure. Proper means are not used to fix the gases which are generated by putrefaction, and which constitute the elements of vegetable food. Every manure heap should have a foundation of muck to receive the liquid which exudes from it—layers of muck intermixed with it to keep the manure from being overheated and a protection of some kind to keep it from the influence of the weather. Plaster should always be used for fixing the ammonia. Very few farmers pay any attention to the degree of heat attained by the fermenting manure; it should never exceed one hundred degrees of Fahrenheit's thermometer. At a much lower heat, carbonic acid, and other gases ascend as elastic fluids and are diffused and lost in the atmosphere; the manure heap becomes *fire-fanged*, and its fertilizing ingredients are expelled.

So long ago as 1812, Charles Alexander, an intelligent farmer in Scotland, published an account of his experiments to ascertain the value of the urine of cattle as a manure. He commenced operations by digging a pit near his feeding stalls but distinct from that which was occupied by the solid manure. The dimensions of this were thirty-six feet square and four feet deep. Surrounded on all sides by a wall. Having selected the nearest spot where he could find loamy earth, he proceeded to fill it and found that the whole expense of transporting the earth to it did not exceed \$29. When the work was complete he levelled the surface of the heap on a line with the sewer which conducted the liquid from the byre, that he might be enabled to saturate the soil evenly. The liquid was supplied by fourteen cattle which were kept for five months on turnips and hay. The contents of the pit produced 288 loads which manured seven acres of land. He tried this experiment annually for ten years, and used in separate fields the rotted cow dung and the saturated clay, and found in all cases the latter was fully equal to the former. The beneficial effect of the compost on the soil were fully as permanent as those of the barn-yard dung. The pit which contained the solid manure of the fourteen cattle, as well as the litter employed in bedding them, only furnished two hundred and forty loads, which manured six acres. The value of the urine therefore, when compared with the solid manure, was in the ratio of seven to six, so that it is evident that the liquid is more valuable than the solid matter. We have been calling on our rural friends to construct tanks and to saturate muck and solid manure with the valuable liquid which at present is so much neglected, and we hope to see our views carried out. By having a tank, even of the rudest kind, the quantity of manure on a farm may be doubled and the crops increased in proportion. We suggest that it would be considerable saving of labour to form the heap of muck in the field, wherein it is to be used, and to draw the liquid manure from the tank for the purpose of saturating it. The spring is so short in this latitude that everything that can be done to forward farm operations should be effected. Late sown crops seldom produce well.

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### IMPROVEMENT OF VEGETABLES.

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There is no vegetable now cultivated, which is not susceptible of almost indefinite improvement. Yet we see very little difference between the crops produced now, and the crops raised by our forefathers. Indian corn, beans, pumpkins,

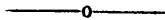


squashes are the same, identically, as we were accustomed to see in our father's fields and gardens forty years ago, except that, in some instances, there is an obvious deterioration as regards both size and quality. This is the plain result of carelessness - a sin to which most cultivators will, we fear, be compelled to plead guilty, and of which they are annually, although some seem not to be aware of it, experiencing the fatal effects. The power of art over nature has already been most forcibly exemplified in the vegetable kingdom, and with reference to some of the very productions which, in this enlightened age, we are permitting to "run out."

Wheat is a factitious grain, exalted to its present condition by the assiduities of culture. Neither rye, rice, barley or oats are at present to be found wild in any part of the world, if we may credit the assertion of BUFFON; they have been altered by human care and industry from plants to which they now bear no resemblance. The acrid and nauseating *opium graveolens* has been transformed, by the magic of culture, into delicious celery: and the colwort, a plant of diminutive and scanty leaves, not exceeding half an ounce in weight, has been improved into the succulent cabbage, the leaves of which weigh many pounds!

The potato, the introduction of which has added millions to our population, derives its origin from a small, bitter root, indigenous in Chili and Montevideo.— Similar results have attended the cultivation of other vegetables, fruits and flowers.

By carefully studying the habits and modes of nutrition and growth covered by the various products of the soil, and by selecting annually the best most perfectly developed and most productive products of the field and garden, we may, in a very brief period, so modify and change them, as almost to remove them from their respective classes. The fine specimens of Indian corn which we see at our agricultural exhibitions, have all been improved in this way. The Brown and Dutton corn, in their original development, were not perhaps more productive than other varieties, but by carefully selecting the best ears, and continuing the practice for several consecutive years, the very habitudes and physical characteristics of the vegetable seem to have been changed. Wheat, also, has been greatly ameliorated by the same process, as have oats, and many of the culmiferous vegetables. But this improvement is merely local, whereas it should be general, to produce its legitimate effects upon our agriculture.



**THE PARSNIP AND CARROT.**—We have long thought that not nearly so much attention was paid to the cultivation of Parsnips as its value would seem to demand. It is true the crop requires careful cultivation, and in the first weeding requires considerable labor; but then no root crop is more abundant, or perhaps pays so well.

The soil for this crop should be rich, deep, and well pulverized. Subsoil ploughing it, operates very beneficially. The seed should be sown in drills, and the drills some twenty-eight inches apart to admit of a small cultivator between them. The seed should be of last year's growth, and should be covered very slightly. It takes a considerable time for it to vegetate and appear above ground, and then must be observed not to mistake the young plants for weeds. After reaching two inches in height, the plants should be thinned out, leaving the strongest to remain, about four inches apart. We have known a thousand bushels to be raised to an acre; five hundred are a common crop.

They are very nutritious food for horses, cattle, and swine; the latter fatten upon them perhaps better than upon any other root, and are very fond of them.

Seed may be planted up to the 15th instant. Some perhaps even plant later, but it is not to be recommended.

As to the culture of Carrots, the same details may be pursued. There is scarcely a shade of difference. The variety called the Orange is the best for field culture.

PREPARING CORN FOR SEED.—Last year, Dr. Chamberlain, of this place, made some practical experiments with chloride of lime, and although he claimed nothing more than the application of a well known principle, he demonstrated the fact that nearly half the time might be saved in germinating the seed by the use of chloride of lime.

Not satisfied with the success of last year, the doctor is again in the field of experiment. In his office he has four boxes; in the first is corn planted without soaking, and the seed not germinated; in the second, the seed was soaked in warm water, which has just commenced to germinate; in the third is seed soaked in a solution of chloride of lime, and green blades are just peeping from the ground; in the fourth is seed soaked in a solution of chloride of lime and copperas, in equal parts, and the blades are now nearly three inches above the ground. All the seeds were planted at the same time, in the same quality of soil, and taken from the same ear. The boxes have all had an equal share of heat and light, neither allowed any advantage over the other.

This experiment should attract the attention of farmers. We conclude from four to six weeks may be saved by the use of chloride of lime and copperas, which is a matter of no ordinary moment when we reflect that a delay in the germination of the seed of two weeks frequently place the crop within the reach of the frost in the fall. Another fact of some importance may also be mentioned: The copperas used in soaking will prevent the birds, squirrels, worms, &c., from eating the seed.

Dr. Chamberlain assures us that one pound of chloride of lime and one pound of copperas in water, will soak enough seed for twenty acres. The cost will not be over twenty-five cents. Every farmer could afford to make the experiment even if he should fail to derive any benefit from it. [Prairie (Ill.) Farmer.]

TO COOK SHAD.—With iron the shad should never come in contact. A piece of planed plank two feet long and one foot wide, with a skewer to impale the fish upon it, are all the culinary implements required. A fire of glowing coals, in front of which the shad is planked, gives you a shad cooked as shad should be.

REGULARITY IN MILKING.—Mr. O. E. Hannum, a very successful dairyman of Portage Co., Ohio, a native of Berkshire, Mass., names the points of his management as follows: Good cows, good feed, good milking, good care and management of the milk. He puts "good milking" in italics, and remarks: Each cow should have a steady milker, be milked as fast as possible, and all the milk drawn. I am satisfied that there is a loss of one-third in many dairies, by the lazy, haphazard way in which cows are milked. I have known persons sit down in the milking-yard and go through with some long yarn, and be from ten to twenty minutes milking one cow, when it should be done in less than five."

A SPECIFIC FOR THE ONION MAGGOT.—As soon as there are any appearances of the maggot, remove the dirt from the bulbs of your onions, and the invaders will take French leave, or some feathered prowler will nab them for a breakfast.

This prevents as well as cures. The onion is tenacious of life, and removing the earth from contact with the bulb does not prevent the growth or perfection of the plant, as the fibrous roots are amply sufficient for its complete development.

MONTREAL RETAIL MARKET.

		MONSIEUR.		DAME.	
		s.	d.	s.	d.
FLOUR.					
Country Flour, per quintal	.....	15	6	a	16 0
Oatmeal, per quintal	.....	11	6	a	12 0
Indian Meal, per quintal	.....	0	0	a	0 0
GRAIN.					
Wheat, per minot	.....	1	10	a	2 0
Oats, per minot	.....	0	0	a	2 1
Barley, per minot	.....	0	0	a	0 0
Pease, per minot	.....	3	9	a	4 0
Buckwheat, per minot	.....	2	9	a	3 0
Indian Corn, yellow	.....	5	0	a	5 6
Rye, per minot	.....	0	0	a	0 0
Flax Seed, per minot	.....	5	6	a	6 0
Timothy, per minot	.....	0	0	a	0 0
FOWLS AND GAME.					
Turkeys, (old) per couple	.....	5	0	a	7 6
Turkeys, (young) per couple	.....	0	0	a	0 0
Geese, (young) per couple	.....	4	0	a	6 0
Ducks, per couple	.....	2	6	a	4 0
Ducks, (wild) per couple	.....	3	0	a	3 6
Fowls, per couple	.....	2	6	a	3 0
Chickens, per couple	.....	0	0	a	0 0
Pigeons, (tame) per couple	.....	1	3	a	2 0
Pigeons, (wild) per dozen	.....	5	0	a	5 6
Partridges, per couple	.....	0	0	a	0 0
Woodcock, per brace	.....	0	0	a	0 0
Hares, per couple	.....	0	0	a	0 0
MEATS.					
Beef, per lb	.....	0	4	a	0 9
Pork, per lb	.....	0	5	a	0 7
Mutton, per quarter	.....	5	0	a	7 0
Lamb, per quarter	.....	2	4	a	0 0
Veal, per quarter	.....	5	0	a	12 3
Beef, per 100 lbs	.....	35	0	a	40 0
Pork, (fresh) per 100 lbs	.....	37	6	a	40 0
DAIRY PRODUCE.					
Butter, (fresh) per lb	.....	0	9	a	1 0
Butter, (salt) per lb	.....	0	8	a	0 9
Cheese, per lb, skim milk	.....	0	0	a	0 0
Cheese, per lb, sweet do	.....	0	0	a	0 0
VEGETABLES.					
Beans, (American,) per minot	.....	0	0	a	0 0
Beans, (Canadian) per minot	.....	7	6	a	10 0
Potatoes, (new) per bag	.....	3	9	a	4 6
Turnips, per bag	.....	0	0	a	0 0
Onions, per bushel	.....	0	0	a	0 0
SUGAR AND HONEY.					
Sugar, Maple, per lb, (new)	.....	0	4½	a	0 5
Maple Syrup per gallon	.....	0	0	a	0 0
MISCELLANEOUS.					
Lard, per lb	.....	0	8	a	0 9
Eggs, per dozen	.....	0	6	a	0 7½
Halibut, per lb	.....	0	0	a	0 0
Haddock, per lb	.....	0	3	a	0 0
Apples, per barrel	.....	10	0	a	20 0
Oranges, per box	.....	20	0	a	25 0
Hides, per 100 lbs	.....	0	0	a	0 0
Tallow, per lb	.....	0	4½	a	0 5
BREAD.					
Brown Loaf	.....	0	10	a	0 0
White Loaf	.....	0	9	a	0 0