Technical and Bibliographic Notes / Notes techniques et bibliographiques

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

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

- ☐ Coloured covers/ Couverture de couleur
- ☐ Covers damaged/ Couverture endommagée
- ☐ Covers restored and/or laminated/ Couverture restaurée et/ou pelliculée
- ☐ Cover title missing/ Le titre de couverture manque
- ☐ Coloured maps/ Cartes géographiques en couleur
- ☐ Coloured ink (i.e. other than blue or black)/ Encre de couleur (i.e. autre que bleue ou noire)
- ☐ Coloured plates and/or illustrations/ Planches et/ou illustrations en couleur
- ☑ Bound with other material/ Relié avec d'autres documents
- ☑ Tight binding may cause shadows or distortion along interior margin/ La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure
- ☐ Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/ Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

- ☐ Coloured pages/ Pages de couleur
- ☐ Pages damaged/ Pages endommagées
- ☐ Pages restored and/or laminated/ Pages restaurées et/ou pelliculées
- ☑ Pages discoloured, stained or foxed/ Pages décolorées, tachetées ou piquées
- ☐ Pages detached/ Pages détachées
- ☑ Showthrough/ Transparence
- ☑ Quality of print varies/ Qualité inégale de l'impression
- ☑ Continuous pagination/ Pagination continue
- ☐ Includes index(es)/ Comprend un (des) index

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

- ☐ Title page of issue/ Page de titre de la livraison
- ☐ Caption of issue/ Titre de départ de la livraison
- ☐ Masthead/ Générique (périodiques) de la livraison

☐ Additional comments:/ Commentaires supplémentaires:

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

10X	12X	14X	16X	18X	20X	22X	24X	26X	28X	30X	32X
						✓					

THE FARMER AND MECHANIC,

Devoted to Agricultural, Horticultural, Mechanical, and Domestic Subjects.

Vol. I. TORONTO, CANADA WEST, JULY, 1849. No. 10.

Agriculture.

HAY MAKING.

THE season for making hay has now fair ly arrived, and a few practical directions, embracing the whole economy of this important branch of farm labour, may not be considered uninteresting to a portion of our readers. The great point to be observed in curing hay, so that it may retain its natural green color, is to keep it from being exposed to the parching influence of the sun, and also, if possible, to proct it whilst undergoing its curing process, from being drenched with rains. The ordinary method of spreading the newly-mown grass thinly over the ground is *not to be recommended*, only under certain circumstances. If the grass be very heavy, and the weather likely to be unsettled, the sooner it is cured the better; but even under such circumstances, it would be well to make it up into cocks, containing two cwt. each, rather than to put it into the mow or stacks before it becomes thoroughly cured. The loss sustained by spreading newly-mown clover, between evaporation and broken heads and leaves, must be equal to ten per cent. on the entire crop. To obviate that loss, the grass might be partially allowed to wilt in the swarth, say from four to six hours during a tolerably hot day, and then it should be put into small cocks, containining each about half a cwt. of cured hay. If the weather be rather cloudy and unfavourable for making hay, there doubtless would be a necessity for spreading; but, in doing so, care should be observed to retain, if possible, its natural green color, which can only be done by making it up into cocks, each night, so as to prevent its becoming discolored by the action of dews. When the practice of making up the swarths into small cocks is followed, it may frequently be found advantagecus to put from four to six of the small into large ones; but every farmer in this should be guided strictly by his own judgment, as to the state of the weather, the force of hands he can command, and the average value of hay in his particular locality, should regulate the expenditure. It is however a matter that none will pretend to dispute, that a ton of well cured hay contains more nutritious matter for stock than two tons badly cured. In taking extra pains in curing hay, the great difference in value between good a good and bad article should be remembered, and if by expending half a dollar extra in giving thorough attention to the business, a much greater return will be obtained, and a more ready sale; herefore it certainly would be judicious to make such an investment.

In countries where labour is high, and farm produce comparatively low, expedition in executing the operations on the farm is a matter of the greatest importance. For this reason there may be many cases in which it would not be judicious, on the the score of economy, to employ the pains required in the foregoing suggestions. The revolving horse rake, the coil tooth, or some of the other patterns of this useful implement, should be employed in the process of curing hay on every well-regulated farm. With, this implement and a horse, a man may without difficulty, perform the labour of eight men. The economy in the use of this valuable invention does not simply consist of the money value of the labour saved, but by its use every farmer may safely reckon upon being able to cure his hay crop, let it be ever so abundant.

Where a very large business is done, it would be well to scatter the grass evenly over the ground, as fast as it is mown, and at

the close of the evening the whole quantity cut during the day should be put in cocks containing about one cwt. each, where it should remain for a number of days to cure. The loss by evaporation will, in this case, be considerable; but if care be taken to put the whole that was mown during the day into cocks, before it is exposed to the influence of dews and rains, the hay will retain its natural green color. Mowing should, in most cases, be performed in the forenoon, so that the whole force could be employed in the afternoon in raking, cocking, and in driving in any portion that may be sufficiently cured for that purpose. By the aid of a rake and horse, a man will find no difficulty in putting together in rows from two to three tons of heavy hay per hour. Three men will find constant work to cock and hand rake as fast as it is put together with the horse rake. Many are disposed to think it too much trouble to cock their hay, and prefer taking it from the rows to the barn; but, by this means, it becomes musty, and much deteriorated in value. It is a dangerous experiment to put hay in the barn or stack in a partially cured state; but when necessity equires such a course, layers of straw should be spread at frequent interval throughout the mass; and if this cannot be conveniently done, salt, at the rate of about half a bushel per ton, should be scattered evenly over it as it is stowed away in layers of from two to three feet. Hay that is mown in the morning, and evenly scattered after the scythe, may be drawn into the barn the following day, provided that layers of other straw be scattered over the mower at intervals of from four to six feet each: the quantity of straw in proportion to the hay, should be about twenty per cent. When this plan is practiced, the hay will require to be put in cocks, as much as if it was intended to remain in them for a number of days; even fifteen or twenty hours sweating will secure it from becoming must if scattered through the mass as above described.

There is no labour on the farm that is more severe than mowing, and it is a happy reflection to find that the science of agricultural mechanics has come to the aid of the farmer, by which he is able to employ his beasts of burden to perform the heavy and tedious labour of swinging the scythe. William Ketchum, Esq., of Buffalo, New York, has invented a mowing machine to be propelled with two horses, which will cut one acre of heavy grass per hour, in as perfect a manner as could be done by the most skillful mower. We lately had an opportunity of minutely examining Mr. Ketchum's machine, and we are prepared to say that it is as perfect for the purposes intended as could be designed.

CLOVER AND WHEAT CULTURE.

The Wheat growing farmer of Canada should bear in mind, that, in consequence of the liberal commercial policy of Great Britain, the advantages formerly enjoyed in the markets of the mother country, are no longer exclusively retained for their benefit, but that foreigners, colonists, and British farmers, so far as the item of breadstuffs are concerned, are now placed upon a level in the English markets. It must be quite clear to every man who has a knowledge of the vast agricultural resources of the north of Europe, and those also in the United States, that the prices of breadstuffs must range low in their average under the operations of unrestricted trade. The change in the Tariff Laws of Britain has, doubtless, had a serious influence in depressing the spirits of the wheat growers of this colony, and produced, at the same time, an opposite effect on the minds of the farmers of those countries that formerly were shut out on account of the high tariffs of the British markets. The Canadian farmers, to understand their true position, should be apprised of the fact, that the farmers of many of the grain growing countries of

Europe and America, consider themselves abundantly well paid if they can realize for their wheat from two shillings to two shillings and sixpence per bushel.

The question to be determined is one of very simple solution, and the practical farmer must work it out practically on his own farm. If wheat cannot be grown profitably to compete with other wheat growing countries, in those markets where we send forward our surplus breadstuffs, then it is obvious that less of this great staple will be cultivated, and other branches of husbandry made to supersede it. If possible, the cost of production must be reduced, so as to enable the wheat growers to afford the article at a less price than they have formerly been able to do. The expensive system of making summer fallows, as we have on former occasions endeavored to impress upon the attention of our readers, must if possible be discontinued. The loss of a year's rent of land, the extra expense of cultivation, and the loss of a crop are not required to secure to the farmer a crop of wheat, yielding some twenty to thirty bushels per acre, which affords sufficient inducement.

On a former occasion we gave practical directions at length, showing how to cultivate clover in connection with winter wheat, thereby to get a full average crop, with one half the labour required to make a summer fallow. The period has now nearly arrived when the correctness of the opinions therein set forth can be practically tested.

If the proper appliances were at hand, to execute the work in a business-like style, a clean clover sod, ploughed the last week of August, to nine or ten inches in depth, would be preferable to two ploughings; but as these cannot be had without incurring a heavy expense, it would be better not to risk it. A failure of crop, occasioned even from causes in which the farmer might be notoriously in fault, would, in the eyes of those who do not take the trouble to investigate them, be sufficient to induce the sufferer to repudiate the whole system. On this account it would be decidedly better to plough up the clover sward immediately after the grass crop is harvested, which, according to an average of seasons, would be in the early part of July. The sooner the plough is put to work, after the heavy crop is harvested, the better will be the condition of the soil for wheat. On most soils, a furrow of from eight to ten inches in depth should be made, which will require a strong plough, and a heavy team to work it. By turning up two or three inches of new soil to the action of the atmosphere, a consistency will be given to the old soil, which had become too light for wheat; besides this, the roots of the wheat plants will strike more deeply than on a thin soil, thus lessening the risk of loss from the action of spring frosts.

When clover sward is ploughed in July, it should be allowed to remain undistured until the period when the second or seed furrow should be ploughed, which in most cases would require to be performed the latter part of August, so that the seed could be sown the first week in September. By allowing the inverted sod to remain untouched with either harrow or cultivator during the months of July and August, wild grasses and roots of weeds in the ground will undergo decomposition, and be much more thoroughly destroyed than if it had been expensively worked with those implements.—The second ploughing, or seed furrow, will turn up rather cloddy, to *sadden* the tastes of some farmers, but those who understand the habits of the wheat plant do thoroughly appreciate the importance of keeping land for winter wheat in a cloddy condition, provided that weeds and grasses be destroyed. A well-managed crop of clover, if hay be worth two pounds per ton, will pay the entire expense of management required for both the clover and wheat crops. This fact should be borne in mind, because it is of much greater importance than would at first sight be supposed.

If the farmers of Canada are so situated that they will be under the necessity of selling their wheat at a lower price than formerly they have been in the practice of, the true method to adopt is to so alter their mode of farming as to enable them to fairly meet these altered circumstances, without allowing such, if possible, to check their ardour in effecting substantial agricultural improvements.

THE PERIOD FOR CUTTING WHEAT.

A few years ago, John Hannan, Esq., a celebrated and scientific Yorkshire agriculturist, made a number of experiments, with a view of ascertaining the best period for harvesting wheat, and after carefully weighing the different samples, and comparing their products in flour, bran, and shorts, the difference in favour of cutting the crop about ten days before it might be considered dead ripe was equal to one-sixth the value of the whole. The net saving gained in this way was considered sufficient to pay the entire expense of harvesting and thrashing, besides which, the quality of the straw was vastly improved by early cutting. In England it requires a much longer period for grain crops to mature than on this Continent, and therefore it would be quite safe to say that wheat and other grain crops would make as much progress in ripening here in four days as in that country in ten. It would be difficult to lay down any general rule by which the reader could be correctly governed in determining the most profitable time to cut the wheat crop, but we can scarcely be misunderstood in recommending that it should begin a few days earlier than is usually the practice. When the straw mostly becomes yellow, having only a few streaks of green near the tips of the chaff, the heads quite erect, and the berry large and just out of the milky state, we have found, from repeated experiments, that wheat cut in this state is more productive, and will make a better quality of flour, than if harvested before or after that period.—When wheat is cut early, the berry is of a light bright colour, the skin thin, and the flour finer and better in quality than if cut when fully ripe. If wheat has a very dark and luxuriant green colour a short time before it ripens, or when it is in a milky state, and shows pretty clearly that the crop is predisposed to rust, it would be well to begin cutting six to eight days earlier than in ordinary cases it would thoroughly ripen. By judiciously observing this advice, and putting the grain in round shocks, snugly capped, as fast as it is harvested, a great saving may be effected, and, indeed, the rust very frequently evaded. Wheat cut before the straw has become thoroughly yellow, or when the grain is in a doughy state, may not be quite so plump as if left for the straw to ripen; but the grain will be of a peculiarly transparent colour, and it will make more flour, and of a better quality; having less bran than if cut at the period usually practiced by our farmers.

MANAGEMENT OF CATTLE.

In attempting at essay on the management of cattle, I am well aware of the difficulty attending it. As the ground has so often been gone over, I fear there is little new to add to what has already been written; but having been long connected with the breeding of cattle, particularly the "Improved Short-horns," I may be allowed to state that the contents of these pages are from practical experience.

I have divided the various breeds under the heads Scotch, Welsh, Irish, English, and Channel Islands cattle.

In this brief survey it is only the well-defined breeds that will be noticed, as nearly every county of Britain contains a breed peculiar to itself, some of the characteristics of which are so slightly defined that it would require too much space to mention them all.

SCOTCH CATTLE—WEST HIGHLAND BREED.

The West Highlands or Kyloes are undoubtedly the pure native breed, and have

remained uncontaminated. The head is not large, ears thin, muzzle fine, face broad, legs prominent, countenance placid, horns tapering fine and of a waxy color, widely set on, breast wide projecting before the legs, chest full, neck fine, rising with a gentle curve to the shoulders, back straight, flat, and wide; color black; coat thick, long, and an abundance of hair about the face; legs short and straight; flesh of the best description when fat; constitution very hardy; bad milkers.

There is much difference in their size, those from the island of Islay being the largest. The Argyles are a variety of this breed.

NORTH HIGHLAND BREED.

This breed inhabiting a cold dreary country are very small. They have large coarse heads, shaggy ears, high and narrow backs, flat ribs, small chests, and long legs; buttocks thin, bones prominent, horns short and bending forwards, color black or brindled, hair very long, close, and strong.

This diminutive breed will not thrive if removed far south of their native district; though placed in the midst of abundance they will pine and die.

FIFE BREED.

Color black, horns white and small, turned up at the points; bones small, limbs clean and short, skin soft, ribs narrow, wide set, much curved; body thick and round; good milkers; and good workers; constitution hardy.

AYRSHIRE BREED.

This breed, though of recent date, have obtained much celebrity for the dairy. Nothing was known of these previous to 1730, and their origin is clothed in obscurity.

The characteristics of the breed are, horns small, clean, and smooth, bending forwards and tapering to the points which are turned up; legs short; neck finely tapering towards the head and thicker towards the shoulders; head small, rather long and narrow; fore quarters light, deep in the carcass, shoulders thin, udder broad and capacious, milk veins large and prominent, teats short, color light red and white with black muzzle, hair soft woolly, figure compact and well proportioned.

The quantity of milk, considering their size, is large; five gallons per day for ten weeks after calving is not above an average. The quantity of butter and cheese produced from the milk of this breed is very great.

I have had a few of this breed, but did not find them to answer, taking all things into consideration, equal to the improved short horns.

The Dunlop cheese, of which so much has been said, is manufactured in the district where this breed is principally bred.

GALLOWAY BREED.

The head is heavy; horns none; eyes not prominent; ears large, rough, and full of long hair; back straight and broad, and nearly level from the head to the rump; legs short, fine in the shank bone; neck thin; shoulders broad; chest broad, and deep; skin loose and mellow, covered with long silky hair; color black or dark brindled brown; constitution good and very profitable for the grazier, as they lay their fat on the most valuable parts, and their flesh is well marbled; their milking properties are not great, but the quality is rich. A cow giving sixteen quarts of milk per day is considered a superior milker, but the average is not above six quarts.

IRISH CATTLE.

Ireland evidently originally contained two distinct breeds, one found in the mountain districts with middle sized horns, and the other in the Lowlands with horns of enormous length. The first is decidedly the aboriginal breed; they have generally smallish heads, very thick in proportion; necks thick; horns rather short, fine, projecting rather forwards upright; hips wide, bones moderately fine, skin thick, hair coarse and long, color black or brindled, faces white, eyes good, muzzle sharp, constitution good, good milkers and very hardy, fatten quickly with good keep, are very wild and will gallop like stags, being difficult to confine. No breed will produce the same quantity of milk with the miserable keep this breed generally get in their native country.

The old breed are most valued for the dairy. Many of the cows will yield from 120 to 140lbs. of butter per year, and the average of them 80lbs. per annum.

The other breed have immense long horns turning all ways, but generally downwards, which give them a very sorrowful countenance; they are much larger than the others; their origin is not known, but there is evidently a cross of the Craven to be seen.

WELSH CATTLE.—ANGLESEA BREED.

Heads medium size, face flat, horns long and turned up, chest deep, shoulders heavy, barrel round, dewlap very large, color black,

hide mellow, hair coarse, size small; they produce little milk, and that of a poor quality.

It is said that nearly 1200 of these cattle are annually imported from the isle of Anglesea, which when transplanted on better pastures speedily fatten.

GLAMORGAN BREED.

This once celebrated breed is now much deteriorated from the unskilful management of the Glamorgan farmers. They have neat clean heads, long white horns tapering upwards, tapering necks, dewlaps small, tail high set on, sides flat, sharp in the hip joints and shoulder, high in the rump and long on the leg, color dark brown with white bellies and a white streak on the back, hair short and silky, constitution good, excellent milkers, and good grazers; they are also good workers.

They have of late years been much crossed by other breeds, so that very few of the native breed are now to be found. This breed was in high favour with old George the Third, and the royal dairy was annually supplied with the best specimens that could be procured in their native vales.

PEMBROKE BREED.

The Pembrokes are undoubtedly the best breed that the principality produces. Head light, horns small, yellow, and inclined upwards; loin good, legs short, thighs thin, barrel deep and round, color principally black, hide thickish, hair short and waving, fair milkers, and honest workers. They have some resemblance to to the West Highland or Kyloes.

ENGLISH CATTLE.—SUSSEX BREED.

Head small, horns long, tapering, projecting forward and turned upwards; eye large and full, neck long and thin, fore-arm large and muscular, loins wide, hind quarters well made, thighs straight, back straight, barrel round and deep, color deep chesnut red, hide mellow, hair short and sleek, constitution good; they are good workers, and fatten well.

LONG HORNS OR CRAVENS.

Head long and thick, eyes large, ears very small, horns very long and turned in various directions; neck heavy, fore quarters thick; ribs short, barrel round, chine fine, rump coarse; thighs large, legs heavy; color red roan, hair long and rough; constitution good, and medium milkers.

It was from this breed that Mr. Bakewell raised his celebrated Dishley herd, which has now passed away. The author of *British Cattle* asks what has become of *this breed*; the answer is, that the blood is diffused far and wide, but the pure breed perished with the master-mind that created it.

SUFFOLK BREED.

Head fine, horns none, dewlap small, legs short and thin; chine thin and hollow, loins narrow, barrel large; belly heavy, hips high and ill covered; udder large, milk veins very large; color red, red and white, and brindled; hair shaggy; constitution good; good milkers.

The old Suffolk duns, as they are called from their color, are fast disappearing. The polled cattle of Norfolk approach the Suffolk breed, and both have evidently sprung from the same source, viz., the Galloway.

NORTH DEVON BREED.

Head small, remarkably so in proportion to the rest of the animal; eye very prominent, neck long and thin, dewlap very small; horns small, very fine, high colored, sometimes tipped with yellow; breast deep, shoulders oblique, fore-legs wide apart and well under; withers very light, fore-arms large, bones very fine, back straight, sides rather flat, hind qurters long, and well filled up; tail long, small and tapering; skin mellow and thin, color blood rad, hair curly and glossy.

The cows of this breed are much smaller than the oxen, and those are *preferred* with orange or yellow muzzles, and a gold colored circle round the eyes; they must have nothing of either black or white about them.

They are excellent workers, but as milkers are much inferior to many other breeds; their aptitude to fatten is very great, and their flesh is of the best description; they are truly an aboriginal breed.

HEREFORD BREED.

Head small; horns rather long, inclining upwards and spreading; eye full, neck long and tapering, chest full and deep, loins broad, hips wide, carcass deep, barrel round, ribs broad, thighs clean, legs short and upright, shoulder bone thin and flat; flank large, color red, with white faces and sometimes neck and belly; hide thin, hair bright and silky; milking properties bad; excellent for draught.

Their aptitude to fatten is very great, but their flesh is not equal to many other breeds. It is stated that they are a pure aboriginal breed; but I have some doubts about this

point, as the old Herefords had not always white faces, that feature having only come into fashion within the last sixty years. I think this white face may be traced to some Welsh breed, but am not certain Some suppose that they have sprung from the same stock as the Devon; but their grounds of supposition are very slight.

From the American Cultivator.

DRAINAGE OF LAND.

The principal object of draining is to take away surplus water, but in effecting this, other important benefits are secured. It is obvious that a larger quantity of water in the soil than is required for the support of plants, is injurious. It is injurious in various ways. That wet lands are "cold and sour is a common expression, and an acquaintance with the principles which this condition of the soil involves, shows that the popular idea is correct. It has been repeatedly proved that evaporation produces coldness,—that in the exhalation of moisture, heat is also carried off,—and this is one of the reasons why a wet soil is really a cold one. That such a soil is also sour, is proved by the fact that vegetable matters form acids, when decomposed in water. The sournes of peat may be taken as an example, Prof. Johnston observes—"When [soils are] soaked in water, their vegetable matter either decomposes very slowly, or produces acid compounds, more or less injurious to the plant, and even exerts injurious chemical re-actions upon the earthy and saline constituents of the soil."

One of the first objects in the production of any plant, is to secure a temperature congenial to its habits. Every person may have observed that vegetation makes no progress till the weather becomes sufficiently warm. Different species of plants require different degrees of heat; but as a general rule, those which grow in the lowest temperature, are least valuable.

The effect of drainage has been found highly favourable in raising the temperature of soils. Experiments have been made which proved that, at seven inches below the surface, the average degree of heat for thirty six successive days, on a soil which had been underdrained and pulverised, was ten degrees higher than on a soil precisely similar, that had not been drained and worked. [See experiments of Mr. Parkes, Journal Royal Ag. Society, vol. v. pp. 141, 143.] The more rapid growth and perfect maturity of crops on drained lands, is doubtless attributable, in a considerable degree, to the higher temperature thus attained, and is an evidence of the great value of drainage in high latitudes, where, from the shortness of the season, the results of agricultural labours are peculiarly uncertain.

It may be safely assumed that draining is the basis of the great improvement which has taken place in British husbandry within the last fifty years. In America, the practice of draining systematically, can hardly be said to have been introduced. Various trials have, however, been made in different parts of the country: the subject is beginning to attract great attention, and we expect, shortly, to see the business carried on largely and profitably.

It has been objected that drainage is less necessary here than in Britain—that in our drier climate, crops are more liable to injury from drouth than moisture. To this it may be replied, that proper drainage, with a thorough working of the soil, is the best possible protection against drouth. A little observation will convince any person that those lands are most affected by drouth, which at some seasons of the year are too wet; of this class are stiff clays, and soils with a "hard pan" subsoil. Clays, which are not drained, keep the water so long on the surface, that the soil "runs together" and forms a mortar, which, when the water has evaporated, becomes like sun burnt bricks—unworkable, and totally unfit for the growth of plants.—On the hard-pan soil, the surface is completely saturated with water in spring, or in wet weather, the compact subsoil not permitting it to soak into the earth. In both cases, the workable soil is usually this, and as soon as a drouth comes on, the plants droop, and "because they have not much root, they wither away." Crops on such soils are very precarious; the only bed for their roots at any time, is the little portion moved by the plough, and it is but a small part of time, comparitively, that even this is wholly available to them—it being almost always either too wetor too dry. The roots cannot, perhaps, penetrate the hard subsoil, or if they do, are liable to be brought in contact with substances more or less poisonous to vegetation. The effect of drainage in such cases, is to increase the depth of the soil, to render it more permeable to the roots

of plants, and less liable to be affected by drouth.

The first action of the drain is to take away the water from that part of the soil with which it is in direct contact. A contraction of the soil soon follows, and cracks are formed, beginning at the drain, and extending laterally and vertiacly, which admit the percolation of water and conduct it into the drain. When the soil is thus brought into a state which allows the water readily to pass through it, the former difficulties of its running together and baking, are obviated; the soil remains open and friable, and plants are protected against extremes of wet and and drouth.

It is a fact that plants suffer less from drouth on a friable soil, than on a compact one; as may be seen by a comparison of crops on clay and loam. This results from two causes. The roots of plants have more scope in a loose soil, and are thus enabled to draw support from a greater source. A mellow soil is also most moist, in time of drouth —pulverization favoring the ascent of moisture from below, as well as its absorption from the atmosphere. A heap of moulding sand will seldom dry but to a little depth, while hard clay in the same situation will become almost destitute of moisture.

Professor Norton, in his lecture on draining given at Hartford in 1847, states that the extreme drouth which prevailed in Scotland in 1845, it was found that in all ordinary cases, the crops on drained land withstood the drouth much better than those on undrained, "because of the greater depth of soil available to to the plant" And he adds that "it is now a proposition regarded among the best English and Scotch farmers as completely established, that drained land is not only better in wet seasons, but in dry seasons also." [Cult. for Jan. 1848.]

The full benefit of *subsoil ploughing*, on tenaceous soils, cannot be fully obtained without thorough draining. If the water is not drawn off, it soon packs the soil together again, after the plough has been used. Prof. Norton states, that where drains have been laid at proper distances in hard-pan soils, the air and rains soon break up the crust, the water filters through into the drain, and the ocheous deposit is gradually dissolved and carried away. Air and heat being thus admitted into the soil, the noxious compounds which had there formed are decomposed, and wholesome food for plants is produced.

In regard to the question—Where is it proper to make drains? it may be said that they are necessary wherever the character of the natural vegetation indicates water. Rushes, ferns, and what are generally called water grasses, always grow where there is too much water in the soil, at certain seasons of the year, for the growth of the more valuable plants. When the soil is properly drained, these aquatic plants can no longer live. There is scarcely a field on any common farm, that has not spots that would be benefitted by the drain, even for grass, and still more for grain and vegetables. The farmer thinks, perhaps, that as the produce of grass is apparently large, nothing is wanting. But it must be recollected that the produce of wet land is of less weight and value in proportion to its bulk, than that of dry land. If the land is in pasture, animals will reject the herbage that grows on these damp spots, till forced by hunger to eat it. If the grass is made into hay, the same reluctance of animals to eat it is manifested, and their loss of flesh when kept on it, is evidence of its want of nutriment. Prof. Norton states that analyses of samples of grain from two fields, the one drained and the other undrained, showed a decided inferiority in that from the undrained field. It is plain, therefore, that draining not only increases the quantity of produce, but also improves the quality.

Another great advantage of draining, is the prevention of grain and grass from being "winter-killed." This effect is caused by sudden freezing of the ground while the surface is wet. Land on which wheat and rye have been very uncertain from this cause, are found to produce the best crops after having been thoroughly underdrained.

But the advantages of draining in a *sanatory* view, are in many instances of the highest importance. It is well known that stagnant water is very prejudicial to health. In those sections of our country which are particularly subject to bilious fevers, and fever and ague, the soil usually abounds in vegetable matter, and during wet seasons is flooded with water, which frequently covers a large portion of the surface for several days or weeks, and finally goes off chiefly by evaporation. Sad experience has taught the inhabitants of those sections to regard such floodings as precursors of sickness. Similar causes have produced like effects in Europe. An eminent physician, Dr. McNab, observes—"After twenty-six years practice,

I venture to add, that I have scarcely ever had a case of typhus in a malignant form, without discovering some stagnant drain, or over-charged cesspool, or some other manifest cause of malaria, in the immediate residence of the patient." Another writer observes in reference to the situation of a neighbourhood where fevers had prevailed—"Most of the houses surround an undrained common, full of pools of stagnaut water, that in the winter season overflow. In the summer months, and greater part of the spring and autumn, they are stagnant, and undoubtedly, a fruitful source of malaria."

The benefits of drainage on the health of the inhabitants of wet and marshy districts, have been striking. An English report on this subject, says in reference to one district, where the inhabitants were formerly exposed to the malaria of marshy lands,—"for the last few years, *owing to the excellent plan of draining*, very few diseases have occurred that can be said to be produced by malaria. There is very little ague, scarcely any continued fever, and a case of typhus fever has not been known along the borders for the last three or four years. Some years back, a great portion of the parishes adjoining these marshes, was under water from the end of autumn to the early part of the following spring; then fevers and agues of all characters prevailed to a very great extent." Much testimony of a character like this, has been obtained in Britain, and leaves no doubt of the great benefits of drainage in regard to health.

Several diseases of domestic animals, such as "liver-complaint" in cattle, and "rot" in sheep, are known to be connected with the same causes which produce the diseases in man above mentioned. The effects of malaria, and watery succulent herbage, in producing the rot, have long been known. As might have been expected, the health of sheep and cattle has been benefited by drainage to an equal or greater degree than that of the human race. C. W. Johnson states that the rural population of drained districts in England, have often remarked the favorable effects of drainage on the health and improvement of animals, by which losses of stock have been prevented to a great extent.

There is no insuperable obstacle to the drainage of those sections of this country which have heretofore been so subject to particular diseases. A gentleman of great experience in draining, states that drains will draw effectively, if properly made, where there is a descent of only four inches to the mile. There are a few cases where a much greater fall cannot be had. How immense would be the benefits which would follow from the adoption of a thorough system of draining, in those sections!

MODES OF FORMING DRAINS.—Drains have been made in various ways. In clayey soils they have been formed by digging a trench to the required depth, and then placing a block of wood four inches square in the bottom, around which the soil is rammed hard—the timber being then drawn along, and the same operation repeated. The subsequent contraction of the clay, allows the water to enter the cavity thus formed. Such drains operate well for a time, but are not, probably, very lasting.

Stones have long been used for the construction of drains. They are made both with and without an eye, or open space, and if rightly constructed, are considered as efficient as any. It has been found that small stones are best for this purpose, and in England and Scotland they are broken to about the size ordinarly used for macadamized roads, or so small that they will pass through a ring two and a-half inches in diameter. Prof. Norton says—"The bottom of the stone drain should be about six inches across, and from six to eight inches in depth of these small stones, should be thrown in. Turfs cut thin and very carefully so as exactly to fit, should be laid on the top, over-lapping each other, and the *earth rammed down* hard, as the object is to prevent entirely the access of water from above; it should all filter in at the sides, for if it finds an enterance at the top, sand and small stones will wash down, and eventually choke the drain."

But the principal operations of draining in Britain, for the last few years, have been with tiles made of clay, and burnt after the manner of burning bricks. These could be used with more economy, especially in districts where stones were scarce, the expense of transporting the former, being much less. They have been made of various forms. The curved or "horse-shoe" shape was first adopted. The tiles were made in lengths of fourteen to sixteen inches, and three to four inches wide, with "soles" for the tiles to rest on when laid in the drain. The manner of making drains with these, has so frequently been described in our pages, that nothing further seems necessary in regard to them. Of late, another form, called 'pipe' tile, has been introduced. We have never

seen any of this kind; but in regard to the manner of making them, and their operation, we presume they cannot be better described than in the language of Prof. Norton, who during his residence in England and Scotland, made drainage a subject of particular investigation. We copy from his lecture on draining, before referred to in this article:

"It is a simple round pipe, made in lengths like the first, and for the cross drains of not more than an inch and a-half in the diameter of the bore. These can be made much cheaper than the other kind, as they are smaller, and all in one piece. They are not more than half the weight of the old fashioned tile and sole, and therefore an additional saving is effected on the transportation. The trench for their reception is also much smaller, being at the top just wide enough to allow the trencher to work, and cut at the bottom with a narrow tool, to exactly the proper size for the reception of the pipe. The pieces are simply laid end to end, and wedged with small stones when necessary. The water finds its way in at the joints. Many have expressed doubts as to the operation of these drains, thinking that water would scarcely penetrate into so small a channel, through such minute apertures. No difficulty has been experienced in any case. One gentleman, residing in the south of England, who has employed these small pipe tile in draining exceedingly stiff clays, laying them at the depth of three feet, and ramming the clay hard down, offered a premium of £100 to any person who would keep the water out of them. These tiles, of both varieties, are made by machinery. The clay is worked in an ordinary pug mill, such as used in brick-making, care being taken that no stones are present; it is then forced through a die of a circular or horse-shoe shape, according to the kind of tile intended to be made. It passes through in a continuous stream, which is cut off into the proper lengths by hand, or by a little apparatus connected with the machine."

It affords us pleasure to state that the Hon. John D. lafield, of Oaklands Farm, near Geneva, has lately imported from England, one of the most approved machines for making tiles. It is Scragg's patent. It has received two prizes of £20 each, from the Royal Agricultural Society, and the Highland Agricultural Society, as the best tile machine exhibited at their shows. We have received from Mr. Delafield the following remarks in reference to the machine—"It was made by Scragg, of Cheshire, England It is of the largest size, and embraces every improvement to the present time. This machine works the clay and screens it, so as to remove all stones and other substances—it is then carried forward by the machinery, and passed through dies of any required form or pattern, and delivered at the end of the table, ready for the kiln. The dies which accompany the machine, will produce drain pipes of 1, 1½, 2, 2½, 3, 5, and 6 inches bore. Horse-shoe tiles, rising 2½ and 4 inches, with soles to match the tiles—semi-cylinders of 8 and 11 inches in diameter. A pattern has also arrived for a new form of pipe, with a foot attached. This is a new feature, and, as it seems, an improvement. The machine is arranged also for making ridge tiles and pan tiles for roofing.

"As soon as the machine is put into work,' I will send a specimen of each tile to the Agricultural Rooms. It is probable that it may be in operation by June, and then drain tiles will be furnished for not over ten dollars per 1000, and I hope in good time to see them delivered for a less cost. We cannot yet form an accurate calculation, but we are sure not to exceed $10 per 1000.

"I hope to cause the works to be erected close to the canal, that a ready delivery may be made to distant farmers.

"In procuring this machine, I have been much favored by the gentlemanly attentions of Mr. John Girdwood, of Chirk Castle, Scotland, who interested himself much and earnestly in the erection of this particular kind. I am also under obligations to Prof. Norton, who first brought this machine into notice in this country in one of his lectures, and through whom I received an introduction to Mr. Girdwood."

As to the *expense of drainage* in this country, no precise statements can at present be made. When machines for making tile shall have been brought into full operation here, and all other branches of the business become fully understood and systematised, the cost will be reduced. But Mr. Johnston, near Geneva, whose draining operations have been several times spoken of in our pages, states that at the cost which he has incurred, twenty-eight cents per rod, the investment is the most profitable he has made on his farm.

We are not prepared to lay down any definite rules as to the *distance apart* which drains should be laid. This must depend on the condition of the land. In many fields,

drains are only needed in particular situations or wet spots, other portions being sufficiently dry. Where the soil is uniformly wet, or is generally injured by water in the subsoil, the rule which is followed in Britain will probably be found best, and that, according to Prof. Norton, is to lay the drains at eighteen or twenty-four feet apart, which he says will drain the stiffest and wettest land.

The depth of drains, it is generally agreed, should not be less than two and a half feet. They should be so deep that there is no danger of their being affected by any operations on the soil, either in using the common plough or the subsoil plough. When the tiles are once laid, and the earth is properly fixed around them, they should never be disturbed, except to remedy some obstruction.

FARMING ON TWENTY-ONE ACRES OF LAND.

BY WILLIAM GARBUTT.

Messrs Editors:—Many of the cultivators of the soil, who occupy large possessions, do not realize the amount of labour that can be profitably employed in cultivation; and few farm labourers are aware how small a piece of ground will afford full employment to an industrious man, and yield himself and family the comforts of life, and make them an independent home.

In illustration of these facts, I will give an account of farmer B. His farm consists of twenty-one acres: one acre of it is occupied with buildings, yards and garden, and twenty acres are for cultivation—all made productive by thorough dramming and bountiful manuring A good substantial fence all round it, but no division fences. He has 57 rods of patent fence, which is easily removed, with which he encloses one-fourth of the ground for pasture.

The farm is divided into four equal parts—5 acres in each part. First season, No. 1 is in grass, clover and timothy, for pasture; No. 2 in hoe crop—one acre in wurtzels, one potatoes, and three in corn; No. 3, barley; and No. 4 in wheat. With these crops he keeps a regular rotation each year. Second season, No. 1 is manured in the fall with all the manure he has collected the past year, and ploughed for next season's hoe crop; No. 2 is ploughed in the fall for barley next spring; No. 3 (barley stubble) is sown with wheat; and No 4 (wheat) is sown with timothy and clover for next season's pasture—which rotation he uniformly pursues.

He keeps a yoke of oxen, two cows, twenty good ewes, and a breeding sow, for which 5 acres of fresh clover on a rich soil will afford plenty of pasture, provided that he does not turn into it too soon in the spring. The wheat and barley straw, corn stalks and roots, will be ample forage for them in winter. He is industrious, economical, and prudent. Every thing is well done, and in season. The ground is kept clean, no weeds being allowed to grow, not even around the fence. It is made rich by plentiful applications of manure, which renders it very productive. His wheat averages 30 bushels per acre. It will take twenty-four bushels to bread the family the year, (which consists of himself, wife, and four little ones,) and will take 7 bushels for seed, which will leave 119 to sell; this, at $1 per bushel, will make $119. His barley yields 40 bushels per acre: it will take 8 of it for seed, and 192 bushels to market, at 50 cents per bushel, will be $96. The corn averages 60 bushels per acre; the three acres produce 180 bushels: it will take 80 bushels to feed the pigs, fat the pork, and use of the family, (for they eat Johnny cake and mush,) which leaves him 100 bushels to market, at 50c ents per bushel, is $50. The potatoes and beets are all used at home. The wool of the 20 ewes, averaging $1 per fleece, will be $20. They raise 20 lambs, which he sells in July or August for $20. By taking the lambs from the ewes early, the latter will get fat by fall; 15 of them are sold for £30, with which he purchases 20 ewes for next season's keeping—and he has 5 fat sheep left for the use of the family The sows have six pigs the last of March or early in April: 5 of them, with the sow, are fatted, and a young sow kept for pigs next spring. The 5 pigs and old sow when fatted will make 1,100 lbs. of pork; 500 will do the family, with the 5 fat sheep, and leave him 600 lbs. to sell, which at 5 cents a pound is $30. The two calves are fatted and sold for $5. This makes $340 worth sold from the products of the 20 acres, and the family have had their farm living the past year.

It may be thought that this calculation is too large for an average production, but I assure you that if the operator is industrious, economical and judicious, he will seldom fall short of the quantity stated. But it is asked, how can an industrious man be constantly employed on 20 acres of ground cultivated for farm purposes? Look at it. His ground for spring crops is all ploughed in the fall. On the first of April he commences operations for the season. He first sows the grass seed on the wheat; then 10 cwt. of plaster on the hoe ground; and as soon as the ground is sufficiently dry he harrows it and sows the barley; then harrows and cross harrows until it is thoroughly pulverized, and then rolls it. By that time the planting ground is ready to harrow, which operation is continued

until the ground is well pulverized, and the nearer it can be made to a garden tilth the better.

But if he is ahead of the season with his work he can always have full employment in making the manure heap. He collects every thing that will make manure that his time and means permit; he puts on it at least one ton of plaster at different times. Leached ashes, swamp muck, marl, dirty salt, and old brine, are all collected and mixed with the barn-yard dung, so as to increase the manure heap to at least 200 loads.

The ground being in good order and the season favourable, he commences planting the first of May, and takes time and does it well—for there is more lost by careless planting than would pay for four times the labour of doing it well. He first plants the wurtzels, then the potatoes and corn. Planting done, the wheat is to be wed; and as soon as the wurtzels are up he begins hoeing which affords him employment untill the first, and perhaps the fifth of July. He then has some leisure, and assists a neighbor in haying, to procure help in hauling in the grain.

He commences harvest as soon as the grain will answer, and barley will do to cut pretty green. If it is not sufficiently dry to bind let it lie two or three days in swarth. Harvest begun he may work as faithfully as he he chooses until the grain is all secured. That done, he harrows, cultivates, or ploughs shallow the barley stubble, so as to pulverize it thoroughly four inches deep, and sows on it halt a ton of plaster. The corn is now ready to cut up; that done he ploughs the barley stubble deep and well, and sows the wheat. The summer crops are now ready to gather, which employs him a while. When all are secured, he takes out the manure, spreads it evenly over the surface, and ploughs it under. The hoe ground is also to be ploughed for barley next spring, which keeps him busy until it is time to prepare for winter.

In winter he takes good care of the stock, thrashes the grain, and provides fuel—having none on his farm. The orchard is planted by the fence around the farm and door yard.

Now, my Young Friends, be industrious and saving, and you will soon be able to purchase 21 acres of land. And you who have large possessions, and sons you wish to settle near you, divide your possessions with them, and teach them to realize that industry and economy are the sources of wealth—and that a neat, comfortable and independent home, though it is small, will afford more rational enjoyment in old age, than large possessions, with a princely mansion, even if it is not encumbered with debt.

Wheatland, N. Y., 1849.

—Genesee Farmer.

Docking and Castrating Lambs.

Eds. Cultivator—As the time is at hand to attend to docking and castrating lambs, I will give you my method of performing that operation.

When the lambs are from one to two weeks old, and the weather is good, I drive up my ewes and lambs to the barn yard, in the afternoon, towards sunset; put them in a close yard, take out all the lambs. Put the lambs in a small pen, or on the barn floor; then let the ewes out in the barn-yard, which should be well littered with straw. Have a boy to catch the lambs; hand them to another hand, who lets them stand on their feet. I take the tail in my left hand, hold it out stright, have a good shoe knife, and cut off the tail as close as suits fancy. I find this method quicker and better than a chisel and block. Then mark the ear and let the lamb go, keeping them in the yard over night.

In the course of a week or two, bring up the ewes and lambs again. Put them in a close pen; select out the lambs; let the ewe lambs go; put the ram lambs in a pen or on a barn floor. After the lambs are all taken out, let the ewes into the yard. Remember to have it well covered with dry straw. Have a boy to catch the ram lambs, place a good hand on a low bench, who should take the lamb on his lap; hold him by his fore and hind legs. The operator will soon find in what position the lamb should be held. I take my knife, cut off about half the pouch, pull out the testicle, and set down the lamb. The mother comes up to meet him; he soon lays down, consequently soon stops bleeding. The next morning I let them out. The lamb will go off as smart as if nothing had occurred. There is more danger from docking than altering. To perform both operations at the same time is too severe.

I will give my reason for choosing the evening instead of the morning, which is the usual time for altering. If you perform the operation in the morning the ewes are hungry, and ramble about for food, the poor lamb will drag along in pain, and continue bleeding, from the exercise. Reverse the time, and the ewes and lambs lie down and continue quiet all night, and the bleeding soon stops. O. M. F. Wheeler, Stuben Co., N. Y., April, 1849.

The Quantity of Seeds usually Sown to an Acre.

We are often applied to for information as to the proper quantity of field and garden seeds that is necessary to sow an acre of ground. This, it will be perceived, cannot be definitely answered, as all seeds differ in their degree of excitability, or rapidity of germination, and are influenced more or less by the moisture, temperature, and richness of the soil, as well as by

the season and climate in which they are sown. Thus, no two seeds taken from the same seed vessel will germinate precisely at the same time, but on the contrary, one will often do so promptly, while its companion seed will remain dormant in the soil for one or more years.

For instance, fresh tobacco seedlings have been known to continue to appear annually for ten years on the same plot, though no seed was sown after the first year. The same phenomenon often occurs for two or three years, with the hawthorn, the peony, and other plants. Why one seed is more easily excited than another is as yet unexplained.

The quantity of field seeds usually sown broadcast per acre, in this country, is as follows:

Wheat,	1½	to	2	bushels.
Barley,	1½	"	2½	"
Oats,	2	"	4	"
Rye,	1	"	2	"
Buckwheat,	¾	"	1½	"
Millet,	1	"	1½	"
Indian corn,	1	"	2	"
Rice,	2	"	2½	"
Beans,	2	"	3	"
Peas,	2½	"	3½	"
Hemp,	1	"	1½	"
Flax,	½	"	2	"
Timothy,	12	"	24	quarts.
Mustard,	8	"	20	"
Herd's grass,(red top,)	12	"	16	"
Flat turnip,	2	"	3	pounds.
Red clover,	10	"	16	"
White clover,	3	"	4	"
Kentucky blue grass,	10	"	15	"
Rye grass,	10	"	16	"
Orchard gr's,cock'sfoot,	20	"	30	"

The following table shows the quantity of seeds usually sown to an acre in rows and drills:—

Cotton seed,	2	to	5	bushels.
Broom corn,	1	"	1½	"
Beans,	1½	"	2	"
Peas,	1½	"	2	"
Peanuts,	1	"	2	"
Potatoes,	3	"	25	"
Weld,	2	"	4	quarts.
Woad,	4	"	6	pounds.
Lucerne,	8	"	10	"
Onions,	4	"	5	"
Carrots,	2	"	2½	"
Parsnips,	4	"	5	"
Beets,	4	"	6	"

—American Agriculturist.

GRIDDLE CAKES OF UNBOLTED WHEAT.—A quart of unbolted wheat and a teaspoonful of salt; wet it up with water, or sweet milk, in which is dissolved a teaspoonful of saleratus; add three spoonfuls of molasses. Some raise this with yeast, and leave out the saleratus. *Sour* milk and saleratus are not as good for unbolted as for fine flour.

These are better and more healthful cakes than buckwheat.—[Prairie Farmer.

Manufacture of Cheese.

The following article is from the pen of Mr. A. L. Fish, one of the most experienced cheese dairymen of Herkimer county. It will be interesting to that portion of our hundred thousand readers who are engaged in the dairy business—a large number of whom take but one agricultural journal. We copy from the May number of the Cultivator:—

Having been so frequently addressed by different persons in this and other States upon the subject of dairying, that to reply to each individually would be quite inconvenient and burthensome, I propose answering some of the most important questions generally asked by new beginners, through the columns of your widely-circulated paper—hoping they will reach every person who deems book-farming of sufficient importance to take an agricultural paper. At the low rate that such papers are now afforded, those who do not take one have a poor excuse for begging information of their neighbours, to keep pace with the present tide of improvement.

"What kind of cows are most profitable in a dairy?"

It depends much upon location. If a dairyman is remote from a good grain market, where the coarser grains would bear a better profit fed to milch cows than to market otherwise, his selection should be of deep milkers, that will bear grain feed without accumulating too much flesh. If near a good beef market, where beef is worth nearly as much per hundred as cheese, look well to the size and thrift of a cow, so that if she is not a deep milker she will turn well for beef. As a general rule, those are most profitable that are deep milkers, and will hold out a good flow of milk through the season, keep in good condition, and are quiet and gentle. He who cannot furnish plenty of good feed should beware of such cows as have been highly fed, or his profits will be small.

"What is the best age of a cow?"

From five to ten years old. I have no objection to a cow ten years old for a season. She will consume more food than a younger one, but her milk is richer till she begins to decline in condition, and lose strength and vigor.

"What is the most congenial food for cows immediately before and after calving?"

Plenty of good tender hay or grass, and a small quantity, daily, of such other food as is

best calculated to loosen the bowels and nourish the system, without creating a fever in the secretive organs. Wheat bran, oatmeal, potatoes, or other roots, are deemed best for that purpose. If a cow is in high flesh, a mild bleeding from the neck, with half a pound of salts, and in a mash, previous to calving, is good

"What quantity of grain will a cow bear feeding, profitably, and should the kind be varied, at different periods, during the milking season?"

All cows will not bear feeding alike. Some not being deep milkers, would acquire too much flesh, and shrink in milk, with the same amount of feed that others would turn to profit in milk Hence the necessity of feeding separately, with close observation in regard to the constitution and capacity of different cows. A man's observation in his own practice is generally the best test in this matter. I have long since abandoned the practice of heavy feeding before and immediately after calving. Two quarts of corn or barley meal, or four of oat meal, or six quarts of wheat bran, may be safely fed, daily, to each cow. While kept to hay, grain feed should be made into slop, and fermented before feeding. The profit of feeding grain more, or longer than to bring cows to grass healthy and strong would depend upon the comparative value of the feed with that of the product. Nothing can be fed to a cow that will increase the quantity of her milk from plenty of good grass. The only gain in feeding slop and grain during flush of feed is by enriching the milk, and retaining the cows' appetite for it when grass fails. When first turned to grass, cows are apt to scour, and shrink in milk Dry wheat bran, or cob meal, will then be better than slop feed. Barley and corn meal are too cathartic to feed in large quantities while the cows are at grass.

"Can all dairymen make it profitable to grow corn, sown broadcast or otherwise, to feed to milch cows?"

Where the soil is strong enough to bear a large burthen without manuring too highly, it will bear a profit, as it is the best feed that can be given to keep up the flow of milk between early and fall feed. But where the soil needs much manure, it is not good policy to manure highly a small piece of ground to obtain a large crop of any kind, to the neglect of other important crops. In other words, the dairyman would receive a greater benefit, in a long run, from distributing one hundred loads of manure on ten acres of meadow land, after harvest, or putting on that amount with the seed when stocking down for meadow, than by putting it on one or two acres to grow corn, to feed cows in summer. A small feeding of corn daily will take take away the appetite for grass, with little or no benefit. I have found it best to feed plentifully at evening only.

"What is the best mode of heating milk and scalding curd?"

That which will produce the most perfect equilibrium of heat through the whole mass, with the least exposure to excess af heat. A smaller vessel containing the milk or curd, with whey, set into a larger vessel which contains water, through which heat is conveyed to the vessel *containing the milk or whey, is the safest* mode, and is now generally practiced here. The more water there is in the larger vessel, the more uniform heat is conveyed to the milk. If a large tin vat is used, set into a wooden box or vat, the tube attached to one end of the tin vat, and extending down through the bottom of the wood vat, to discharge the whey when the curd is sufficiently scalded, should be large enough to let off the whey at once, or the curd will settle or pack together, and require much hard labor, and will waste, by friction, in separating it, and making it fine enough to drain and salt *properly. A vat for thirty or more cows* should have a tube at least two inches in diameter, and the tin cylinder, with a tube at one end, to fit snug into the tube carrying off the whey, should be as high as the vat, and four or five inches in diameter, with as many very small holes punched in it as can be, and hold together, in order to strain the whey from the curd as fast as it will pass off through the tube.

"Why would it not answer as well to pass steam directly into the milk or whey and curd, as it would save expense in fixtures?

Because that portion coming in contact with steam would be exposed to an excess of heat, and would not be affected by rennet like other portions which were not overheated. Consequently, a strict affinity would not be *maintained, which is necessary for a perfect* coherence; and more or less would float off with the whey, or make trouble in curing the cheese.

"Is a thermometer a sufficient guide in making cheese?"

A thermometer that is correct is an indispensable guide in measuring the amount of heat to be used; but the time of raising the heat and continuing its effect must be varied to meet contingent circumstances.—[Genesee Farmer.

A Fact for Farmers.—Farmers may rely on this fact, that most of their luxuriant cultivated crops are produced by the presence or application of due proportions of *potash*, (as

wood ashes, leaf mould, green-sand marl, decomposed felspar, saltpetre, farm-yard dung, &c.)—*phosphoric acid*, (as bones crushed, burnt, or dissolved, guana, farm-yard dung, oyster-shell lime, shell fish, coprolites, and super phosphate of lime,) and *nitrogen*, (as sulphate and muriate of ammonia, urine, guano, and animal manures generally.) combined with small quantities of lime, salt, magnesia, &c. &c.

SPAYING.

The extennt to which this is done in our State renders it desirable that the best modes of operating be made known. The Prairie Farmer has heretofore treated of two which have their respective advocates. We find another, translated from a French Journal for the "Working Farmer," which seems to differ somewhat from either, and which may be worth attention.

"Having covered the eyes of the cow to be operated upon, we place her against a wall, provided with five rings firmly fastened, and placed as follows: the first corresponds to the top of the withers; the second to the lower anteriorpart of the breast; the third is placed a little distance from the angle of the shoulder; the fourth is opposite to the anterior and superior part of the lower region, and the fifth, which is behind, answers to the under part of the buttocks We place a strong assistant between the wall and the head of the animal, who firmly holds the left horn in his left hand, and with his right, the muzzle, which he elevates a little. This done, we pass through and fasten the end of a long and strong plaited cord in the ring, which corresponds to the lower part of the breast; we bring the free end of the cord along the left flank and pass it through the ring which is below and in front of the withers. We bring it down along the breast behind the shoulders and the angle of the fore leg to pass it through the ring which is at the top of the back; then it must be passed around against the outer angle of the left hip, and we fasten it, after having drawn it tightly to the posterior ring by a simple bow knot.

"The cow being firmly fixed to the wall, we place a cord, fastened by a slip-noose, around its hocks to keep them together in such a manner that the animal cannot kick the operator, the free end of the cord and the tail is held by an assistant.

"The cow, thus secured, cannot, during the operation, move foreward, nor lie down, and the veterinary surgeon has all the ease desirable, and is protected from accident.

"Mr. Levrant advises that an assistant should hold a plank or a bar of wood obliquely under the teats and before its limbs to ward off the kicks, but this method is not always without danger both to the operator and the animal, because, at the commencement, that is, when the surgeon makes the incision through the hide and the muscles, the cow makes such sudden movements and tries so frequently to strike with its left hind foot, that it may happen that upon every movement, the plank or the bar may be struck against the operator's leg.

"On the other hand, although the defence may be firmly held by the assistant, yet it may happen that in spite of his exertions, he sometimes may be thrown against the operator by the movements she may attempt, and there may be an uncontrollable displacement of the plank or bar; and then it may happen that she becomes wounded, and at the same time prevents the operation, while by the mode we point out, there is no fear of accident, either to the operator or the beast.

"In case of the want of a wall provided with rings, we may use a strong palisade, a solid fence, or two trees a suitable distance apart, across which we fix two strong bars of wood, separated from each other, according to the size of the cow.

"There is another means of confining them we have employed for some time past, where the cows were very strong and irritable, more simple than the preceeding, less fatiguing for the animal, less troublesome to the operator, and which answers perfectly. It consists:

First In leaving the cow almost free, covering her eyes, holding her head by two strong assistants, one of whom seizes the nose with his hand and strongly pinches the nostrils, whenever the animal makes any violent movements during the operation.

Second. To cause another assistant to hold the two hind legs, kept together by means of a cord passed above and beneath the hocks; this assistant also holds the tail and pulls it, whenever the animal seeks to change its place.

"The cow being conveniently disposed, and the instrument and appliances, such as curved scissors upon a table, a convex edged bistoury, a straight one, and one buttoned at the point, suture needle filled with double thread of desired length, pledgets of lint of appropriate size and length, a mass of tow (in pledgets) being collected in a shallow basket, held by an intelligent assistant, we place ourselves opposite to the left flank, our back turned a little towards the head of the animal; we cut off the hair which covers the hide in the middle of the flanks, at an equal distance between the back and the hip, for the space of thirteen or fourteen centimetres in circumference; this done, we take the convex bistoury and place it open between our teeth, the edge out, the joint to the left; then, with both hands, we seize the hide in the

middle of the flank and form of it a wrinkle of the requisite elevation, and running lengthwise of the body. We then direct an assistant to seize with his right hand the right side of this wrinkle; we then take the bistoury that we held in our teeth, and we cut the wrinkle at one stroke through the middle; the wrinkle having been suffered to go down, a separation of the hide is presented of sufficient length to enable us to introduce the hand; thereupon we separate the edges of the hide with the thumb and forefinger of the left hand, and in like manner we cut through the abdominal muscles, the *ilias* (slightly obliquely) and the *lumoar*, (cross) for the distance of a centimetre from the lower extremity of the incision made in the hide; this done, armed with the straight bistoury, we make a puncture of the peritoneum at the upper extremity of the wound; we then introduce the buttoned bistoury, and we move it obliquely from above to the lower part, up to the termination of the incision made in the abdominal muscles. The flank being open we introduce the right hand into the abdomen and direct it along the right side of the cavity of the pelvis behind the *cul de saurumen* (paunch) and underneath the rectum, where we find the *cornes de l'uterus*, (matrix); after we have ascertained the position of these viscera, we search for the *ovaires* (organs of reproduction), which are at the extremity of the *cornes*, and when we have found them, we seize them between the thumb and forefinger, detach them completely from the ligaments that keep them in their place, pull lightly, separating the cord, and the vessels (uterine or fallopian tube) at their place of union with the ovarium, by means of the nail of the thumb and forefinger, which presents itself at the point of touch; in fact we break the cord and bring away the ovarium. We then introduce again the hand in the abdominal cavity, and we proceed in the same manner to extract the other ovaria.

"This operation terminated, we, by the assistance of a needle, place a suture of three or four double threads waxed at an equal distance, and at two centemetres, or a little less from the lips of the wound, passing it through the divided tissues, we move from the left hand with the piece of thread; having reached that point, we fasten with a double knot, we place the seam in the intervals of the thread from the right, and as we approach the lips of the wound, we fasten by a simple knot, with a bow, being careful not to close too tightly the lower part of the seam, so that the suppuration which may be established in the wound, may be able to escape.

"This operation effected, we cover up the wound with a pledget of lint kept in its place by three or four threads passed through the stiches, and all is completed, and the cow is then led back to the stable.

"It happens, sometimes, that in cutting the muscles, of which we have before spoken, we cut one or two of the arteries, which bleed so much that there is necessity for a ligature before opening the peritoneal sac, because, if this precaution be omitted, blood will escape into the abdomen, and may occasion the most serious consequences.

CARE AFTER THE OPERATION.

"The regimen that we prescribe during the first eight days following the operation, is a light diet, and a soothing lukewarm draught; if the weather should be cold, we cover the cow with a woolen covering. We must prevent the animal from licking the wound and from rubbing it against other bodies. The hird day after the operation, we bathe morning and evening about the wound, with water and mallows lukewarm, and in default of this we anoint it with a salve of hog's lard, and we administer an emollient glyster during three or four days.

"Eight days after the operation we take away the bandage, the lint, the fasterings and the threads; the wound is at that time completely cicatrized, as we have observed that a re-union takes place almost always by the first intention, as we have only observed suppuration in three cows, and then it was very slight. In this case we must use a slight pressure above the part where the suppuration is established, so as to cause the puss to leave it, and if it continues more than five or six days, we must supply emollients by alcholized water, or chloridized, especially if it be in summer. We then bring the cow gradually back to her ordinary nourishment.

"We have remarked in some cows a swelling of the body a short time after the operation, and state that we attributed it to the introduction of cold air into the abdomen during the operation; but this derangement has gradually ceased within twenty-four hours after the operation. If the contrary should occur, we administer one or two sudorific draughts; such as wine, warm cider, or a half glass of brandy, in a quart of warm water; treatment which suffices in a short time to re-establish a healthy state of the belly, the animal at the same time being protrected by two coverings of wool.

"The operation which we have been describing, ought to be performed as we have said before thirty or forty days after calving, upon a cow which has had her third or fourth calf, so that we may have a greater abundance of milk.

"The only precaution to be observed before the operation, is, that on the preceeding evening we should not give so copious a meal as usual, and to operate in the morning before the animal has fed, so that the operator shall not find any obstacle from the primary digestive organs, es-

pecially the paunch, which, during its state of ordinary fullness, might prevent operating with facility.

"From what has preceded, it is fixed and irrefutable,—

"1. That spaying induces permanency of milk, increase of quantity, and improvement of quality, richer, more buttery, superior color, finer taste and flavor.

"2. The most suitable age is six years, and after the third or fourth calf.

"3. The spayed cow fattens more easily, and furnishes beef of a better quality.

"4. Cows that are bad breeders may be kept as good milkers, and the quality of good cattle kept up."

OVERFEEDING HORSES.

It is one thing to give the horse enough to eat and another to over feed him. A Scotch Journal contains a report of a conversation at a meeting of an Agricultural Society, on this subject.

"Professer Dick said he had been induced to come forward to offer a few remarks on the consequences arising from injudicious feeding of horses, which, if made known, might be prevented, and much disease avoided. The horse was, by nature, always feeding. His stomach was small, and able only to contain small quantities at a time, and if it was gorged, disease was at once induced. He observed a gentleman, now in the room, who had in one year lost about a dozen horses from these causes. The horses were allowed to be indulged by servants with an extra pailful—the stomach was not enabled to act—digestion was suspended—and death was frequently produced in a few hours; if not, some other disease, such as acute founder, ensued. Now, all this might be prevented by a very slight attention to the practice of feeding. If horses were allowed to stop and feed twice-a-day, instead of being worked six hours, and then allowed only one, or at most two, hours in the forenoon to feed—or were the day divided into three portions—the digestive process would go on more readily Even if no more time were allowed, the division of his feeds would be more in accordance with his nature; but when he is fatigued by long continued fasting and hard work, the powers become exhausted, and the natural processes do not go on with the same readiness; and rest and time are required. When a person is on a journey, and pressed for time, he frequently gives his horse some oat meal and water instead of corn—forgetful that digestion must have time to be re-established and set going, otherwise disease is likely to arise in another form, and the stomach is often burst by the generation of gas from suspended digestion. But the greatest harm is done by overfeeding immediately after the day's work is over. After working hard all day, and returning to the stable in the evening, hungry and fatigued, the horse is indulged with a full allowance, which is placed before him at once; he overloads his stomach, and indigestion takes place. All this occurs soon after the men have left the stable, and, unless the noise he makes is heard by chance, he is found dead in the morning. After the day's work is over, instead of a pailful (which is the ordinary allowance) being given on their returning from their work, he would recommend only a quantity sufficient to take of the edge of the appetite, and in an hour and a half afterwards the rest of the feed. He would strongly recommend this plan to be adopted at all times, but especially at this season. A gentleman in the room to whom he had recommended this plan, who had previously lost many horses from indigestion and its consequences, has for several years subsequently scarcely lost any, and these only when, from some accidental cause, the proper precaution had not been taken. There was another circumstance which he wished to bring before the meeting. He would call attention to the practice of giving horses food of an improper description. In the neighbourhood of mills, husks were sold at a small price, and were mixed and boiled up as food for horses; this was always dangerous, and was the common cause of an accumulation of dust balls in the stomach and intestines. He called the attention of the meeting to specimens which he laid on the table. These balls were often found in large quantities. He exhibited four balls of large size taken by him from the same horse, and had seen half a dozen as large as those on the table taken from one horse, which must have been formed in about six weeks, as the horse had never tasted the kind of food until within that period. This disease was most common in Scotland. In England, especially in the chalk districts, another form of concretion was found; there, instead of the dust, or as some call them, dung-balls, calcarious concretions are found, specimens of which were shown. The progress of the disease was sometimes slow, at others very rapid—fresh coatings grew with fresh applications of the same food, and ultimately the passage through the intestines was generally stopped, causing inflamation and death; in other cases the balls remain stationary in size and situation, if the kind of feeding is withheld. He suggested the propriety of doing away with such food—it might be used for years without bad effects; but some accidental cause might produce a nucleus for the formation of a dust ball from the particles of barley or oats. Another circumstance, which he found to be attended with much evil, was giving roots, such as turnips, carrots and potatoes, without being washed. Some thought that these roots should not

be cleaned at all—they believed that earth promoted digestion. Horses, no doubt, were sometimes fond of it; instinct taught them to eat earth when acidity existed in the stomach They might, however, take too much; and though a remedy for a disease to a certain extent, it was not to be given when the disease did not exist. He would, therefore, recommend that all roots, when given to animals, should be washed."

On Stone Fences.

The Editor of "The Plough, Loom, and Anvil" says:—Peter Minor, of Virginia, was a man of rare modesty, and of very rare merit, both in his disposition and his example—in his pursuit of useful knowledge, and in his perspicuous manner of imparting, unreservedly, what he knew, for the benefit of others On the first of October, 1819, a paper was read from him to the Albemarle Agricultural Society, on the subject of stone fences. He maintained that the cost of keeping up timber fences would, in thirty-three years, amount to more than the worth of the land, supposing it to be worth more than $20 an acre.—The view he presented was this:—

An inquiry naturally presents itself on this subject. What is the relative value of a farm fenced with stone, compared with one fenced with dead timber? Take the following data:—

From the best accounts I have been able to obtain from others, and from my own experience, it may be fairly stated that one full month of the annual labour of every farm is consumed in the various operations of cutting, hauling, hauling, and putting up fences. This is one-twelfth of the year, or one complete year in twelve, that is devoted exclusively to making and repairing dead fences; and, as the expense is annual, it is clear that the condition of such fences is no better at the end of any year than at the beginning. Again, I think it may be fairly stated that when the materials are in place, the expense of erecting a stone fence does not exceed that of erecting one of rails, including the various operations above mentioned. The value of the timber, (which is not taken into the account above,) and the advantages of having the land cleared of stone, will balance the expense of moving the stone three or four hundred yards. So that on a farm abounding with stone, and where the transportation does not exceed this distance, I think a fence of stone will in the first instance be as cheap as a rail one. Suppose, then, two farms of 500 acres of arable land each, in all other respects equal, except that one is fenced with stone, and the other with dead timber. Each of them employs twelve labourers, at $100 dollars a piece per annum. One is at no expense, while he who fences with timber consumes one month in every year in making and repairing fences. This is an expense of $100, being the labour of one hand during a complete year. At annual compound interest this would amount in less than thirty-three years to $10,000, which is the entire price of the land, supposing the farm to be worth $20 dollars per acre. Thus, in thirty-three years the one farm would be able to buy the other, from the expense saved in the different mode of fencing. It is true that there are not many farms capable of being entirely fenced with stone, but there are scarcely any that do not admit of it in some degree, and the advantages would be derived in a similar ratio to any part which could be thus enclosed.

Rules in Raising Poultry.

1. All young chickens, ducks, and turkeys, should be kept under cover, out of the weather, during rainy seasons

2. Twice or thrice a week, pepper, shallots, shives, or garlic should be mixed up with their food

3 A small lump of assafœtida should be placed in the pan in which their water is given them to drink.

4. Whenever they manifest disease, by the drooping of the wings or any other outward sign of ill-health, a little assfœtida, broken into small lumps, should be mixed with their food.

5 Chickens which are kept from the dunghill while young, seldom have the gapes;—therefore it should be the object of those who have the charge of them, so to confine the hens as to preclude their young from the range of barn or stable yards.

6. Should any of the chickens have the gapes, mix up small portions of assafœtida, rhubarb, and pepper, in fresh butter, and give each chicken as much of the mixture as will lie upon one half the bowl of a small teaspoon.

7 For the *pip*, the following treatment is judicious: Take off the indurated covering on the point of the tongue, and give, twice a day, for two or three days, a piece of garlic the size of a pea If garlic cannot be obtained, onion, shallot, or shives will answer; and if neither of these be convenient, two grains of black pepper, to be given in fresh butter, will answer.

8. For the *snuffles*, the same remedies as for the gapes will be found highly curative; but in addition to them, it will be necessary to melt a little assafœtida in fresh butter, and rub the chicken about the nostrils, taking care to clean them out.

9. Grown-up ducks are sometimes taken off rapidly by convulsions. In such cases, four drops of rhubarb and four grains of cayenne

pepper, mixed in fresh butter, should be administered. Last year we lost several by this disease, and this year the same symptoms manifested themselves among them; but we arrested the malady, without losing a single duck, by a dose of the above medicine to such as were ill. One of the ducks was at the time paralyzed, but was thus saved.

Lockjaw in Horses Cured by Chloroform.

MOBILE, March 17th, 1849.

DEAR SIR.—Some time in September last, I addressed a communication to you on the application of Chloroform in cases of Lockjaw in horses, and which you were kind enough to publish in your paper.

Since then I have had several opportunities of testing this mode of treatment, and in no instance has it failed, with the exception of one, when the administration of Chloroform was delayed till the patient was almost in the agonies of death

My plan of treatment in this hitherto incurable disease is as follows:—On the first symptoms, I give a drench composed of thirty drop of Croton Oil, intimately rubbed in a mortar with thick mucilage of Gum Arabic, and gradually diluted with a pint or a pint and a half of good ale. Immediately on the drench being swallowed, the patient must be bled profusely, put in a warm stable, and, if the weather be cool, carefully covered with rugs. Now is the time to use Chloroform—four ounces will be sufficient for an application, and a convenient mode of applying it is, to make a temporary nose bag of a soft material, and as air-tight as possible; in the bottom of it place a sponge, and on this pour the liquid; by introducing the horse's nose, and tying the bag round and above the nostrils, he will be obliged to inhale, and in a few minutes will be under its influence. Upon rising, the muscles will have lost the rigidity peculiar to the disease, his nervous system will have become quieted and his face have lost that anxiety of expression which accompanies Lockjaw.

The Chloroform must be repeated three or four times—say an hour apart, on the horse's recovery, his strength should be supported by light and nutritive food, and, if the weather be warm, turning him out in a pasture for two or three hours a day, will extend the muscles of his neck, and bring him to the use of his limbs.

I would also suggest, that hand-rubbing of the extremities during the applying of the Chloroform will be highly beneficial.

Respectfuly, &c., TETANUS

[Spirit of the Times.

MARKING SHEEP.—An Agriculturist says, I wish to impress it upon every one who keeps a flock, if not more than half a dozen, that Venetian red is the best thing that I ever used to paint sheep. It is, as most all know, a cheap red paint, only a few cents a pound, and one pound will mark a thousand. Take a pinch of dry powder, and draw the thumb and finger through the wool upon the particular spot you would mark, loosing the powder at the same time, and it will combine with the oil of the wool, and make a bright red mark that rains will never wash out, and which will endure from one shearing to another, but does not injure the wool. It is readily cleansed out by the manufacturer.

Care of New Milch Cows.

Inflamed Udders. During this and the next month, cows will be calving, and should receive the kindest care and attention. A very common trouble with cows, especially young cows, is inflammation of the udder, which, either from the effect of cold or from not being milked soon enough, and therefore stretched or distended too much, becomes "caked," as it is called, and inflamed. Cold water, freely applied two or three times per day, we have found to be an excellent remedy. Soft soap has been recommended as being very excellent to soften and reduce the inflammation.

Retention of the after-birth. Another trouble which we often hear of, is "that the cow has not cleaned well." Sometimes from want of health, especially in very lean cattle, there is not sufficient action in the proper organs to throw off this substance, and sometimes there is an adhesion, and it is retained.

The best mode is to prevent this trouble by timely attention to the cow by feeding her well previous to her calving, so as to increase the health and tone of the system. After the birth of the calf, warm drinks should be given, and the following simple method of managing the cow we have found serviceable, for the knowledge of which we are indebted to one of our neighbors, who has practiced it for several years with good success.

Bind a thick blanket or buffalo skin on the back and loins of the cow, so as to increase the keep up the warmth of the body, and especially that part of it.

Farming in Aroostook.

A correspondent of the *Maine Farmer* states, that he began farming in this district in 1846. He gave one dollar an acre for his land in the "wilderness state," and three dollars an acre for felling trees, and one dollar an acre additional for "chopping the limbs,"—making the cost of clearing including the board of the men, eight dollars per acre. He gives the following account of the profits of an oat crop produced

on three acres of this land. He sowed six bushels of "small Russian oats" on the three acres, in the spring of 1848, and the yield was 225 bushels, weighing 34 to 38 pounds to the bushel, and yielding 22 pounds of meal to the bushel, deducting from which one-sixth for the miller's toll, leaves 18¾ pounds to the bushel, worth $5 per hundred. The account is stated thus:

Dr.	$
To felling and clearing three acres of land	36.00
Six bushels oats for seed,	5.00
Myself two hours to sow same	.50
Koy and horse three days to harrow them in,	4.50
Twelve days' reaping, binding and stocking,	18.00
Man, boy and team 1½ days, to haul them to barn,	5.00
Man 12 days in winter to thresh them out,	15.00
Taking them to mill and returning meal 15 miles,	15.00
Total,	$99.00
Cr.	
By 225 bushels oats, giving 18¾ lbs. meal per bushel, 4125 lbs. meal, at 5 cents per lb,	$206 25
Cost of crop,	99.00
Leaving a profit of,	$107.25

The Russian oats spoken of, are said to be a variety particularly adapted to the rich soil of Aroostook. They do not grow as high as the common oat by ten or twelve inches; are fine-strawed, and seldom lodge so as to injure the grain; are two weeks earlier than the common oat, and are said to make the best meal of any variety.

Horticultural.

DISEASES AND ENEMIES OF THE ORCHARD AND GARDEN.

BY JOHN A. KENNICOTT, M. D.

Messrs. Editors:—I had prepared an article for the May number of the Prairie Farmer, but have lost, or mislaid it. But as it is much better to be in season, if not so well treated, I will give you a hasty sketch of our experience with that "Little Turk," The Curculio or "Plum-weevil."

We have lost many bushels of the choicest plums by his quiet mode of propagation; and the little "hump back" and his cresent mark, are as familiar with us at The Grove, as are the disgusting appearance and defacing traces of his somewhat later, and bolder companion—

The Curculio often commences work as soon as the germ of the fruit is fairly uncovered, but not in general until it is half the size of a large pea. By close examination you will discover his mark—which is the segment of a circle—or rather of an ovoid—oftenest nearest the stalk than the flower end, and seldom in duplicate. The plum Weevil attacks all smooth skinned fruits, but he prefers the Apricot Plum and Nectarine, and will attack the apple, peach, &c., when other fruits are scarce. The Curculio is native here—and has stung our native plums, time immemorial—and we think that his ragages are yet confined to the vicinity of our abundant groves of wild plums. Our choice sorts, *nearest the wild plums*, are soonest attacked in the spring, and always suffer most.

The Curculio is a very shy little rascal—and as the boys say, is great at "playing Possum." His appearance is very odd, and at first you might mistake him for a dry bud—but after findin g two or three you will learn to know him readily. He is somewhat "flea shaped"—but looks about as "like a Camel" as a flea, and perhaps more so—for he has a "hump," two of them, one quite prominent. Mr. Downing says he resembles "a ripe hemp seed"—a pretty good comparison, as to size and color. He is from one and a half to two and a half lines in length and of a brown color, with light and dark spots.

The only *sure way* of destroying this pest (and the defiling Rose Bub) is by hand picking. But the Plum Weevil is wide awake, if he does somotimes "play possum"—and one must be as stealthy as a cat, and about as quick, if you would take him napping. Our mode of catching him is the one invented by that lover of good fruit, and father of Horticulture in Western New York, David Thomas. In the evening or *very early* in the morning cover the ground under the trees where you suspect his presence, with sheets or canvass, and then with a muffled mallet, (the hand, if *hard enough*, is safest,) strike the tree two or three smart blows in quick succession, and then stoop down and secure the fallen enemy as fast as possible, lest he tire of shamming dead, and take to his wings, which he can do, though he is not very fond of using them. We have sometimes caught a dozen or two from a small tree; and this plan, if persevered in, and commenced soon enough, will save your crop, or a reasonable part of it. We say that the above is the only way of getting rid of the Curculio, and Rose Bug also, which we have found uniformly efficient for the time being. Other modes of destruction may be practiced however; and there are several of *prevention*, more or less deserving of trial. Hens and chickens, or turkeys, "cooped" under the trees are found to answer quite well—the young birds catching many and perhaps frightening more away. It is agreed on all hands

the Rose Bug. These two are our greatest pests; and our mode of treating them somewhat similar.

that hogs, pastured in the orchard, will prevent the ravages of the Curculio. But we do not patronize the animal, neither do we believe in "seeding down" an orchard at all, even though "seeded down with hogs;" as some one at Buffalo Convention very quaintly and sensibly advised as the only safe seeding down for an orchard. The hogs eat all the dropped fruit, and the young worm of course; and their constant rubbing against the trees—*and perhaps their odor*—frightens off the pregnant Curculio.

This insect, as well as most others, is not a great admirer of strong odors—pungent or bitter articles. And we think, that after preparing the ground in the spring, Quassia or a decoction of it, Wormwood, Rue, Tansy, or other cheap bitter; or Capsicun, or Tobacco, Whale Oil Soap, &c., spread on the ground, or applied to the tree, would certainly send them elsewhere to seek a place of deposit for their future progeny.

We have tried salt, but have seen no good effects from the application as yet. We always gather up all the fruit as it drops (a good precaution) and burn it, and yet we have plenty of the Plum Weevel left. But of one thing we are very certain, and that is, that we have diminished their numbers, and that now we have not so many as heretofore; and that our trees nearest our large grove of wild plums suffer the most, and those farthest removed, but very little. From this we infer that the colonies in the native plum groves, supply those that attack the trees near them—and that the insect is not inclined to take long flights, though he can use his wings at a pinch, as we have observed when about to pinch him.

There is one means of diminishing the Curculio, which we have practiced, and which so far as I know, may be original with us—and that is to turn the earth under the plum trees entirely over, to the depth of the large roots, just before the insect appears, which we take to be about the time the flowers first show themselves in the spring; by this method we again *bury him* deeply in the earth, about the time he should *emerge* therefrom. We finish this process by levelling the earth, and treading or ramming down very hard and smooth, and then applying salt, sulphur matches, pepper; tobacco, bitter articles, or nauseous ones—and trust that we do good thereby—at all events, we leave a clear, level surface, to spread the cloths on to catch him, and from which the marked plums can be readily gathered up.

The Grove, Ill., April, 1849.

CHEMISTRY is the key which unlocks the great laboratory of nature, and shows us how she performs her complicated processes, and produces all her wonderful phenomina.

To Destroy the Striped Bug, &c.

To destroy striped bugs and other insects, a brood of fifteen or twenty chickens, in a small garden, will keep it free from the above named ravagers. The brood should be hatched about a week before the vines and plants come up. The hen should be secured in a coop near the centre of the garden, with spaces for the chickens to go in and out; it would do you good to be up as soon as light, and see the little busy bodies drawing the worms from the cabbage roots, or the bugs from their hiding-places among the vines. I have used the above remedy for several years with complete success.

I am wintering 160 or more fowls, and intend to raise 12 or 1500 chickens, and I recken bugs and worms won't trouble my garden much. I find fowls the most profitable stock on a farm; my hens have laid between 19 and 20 hundred eggs (and that too without any fresh meat to feed on) since the first of December up to this date. A gentleman from Fort Edward, that was wintering 5 to 600 fowls, called, in my absence, to buy eggs for his own family use; was it not laughable? I have kept an account with my fowls, and find myself in debt to them. The more I feed, and the more pains I take to pay them, the more I get in debt; and finally, after three or four years, I find myself so involved, that I kill off my creditors, and send them to the city to be dissected. S. O. CHAFIS.

Pennsylvania Cultivator.

Parsnips.

The cultivation of the parsnip, as food for stock, has not been generally tested. It is a hardy plant, and the yield, under good cultivation, is very large. This root is sweet and nutritious, and it is doubtless one of the most valuable for stock. In the Island of Guernsey, England, this root is cultivated very entensively for all kinds of stock, and with excellent success. It would be well if this root was more cultivated among us than it is. Every mechanic who has a small garden should not neglect to plant some parsnips.

Earth the Natural Friend of Man.

The great Roman naturalist, Pliny, in one of the most beautiful passages of his elaborate history of nature, observes:—It is the earth that, like a kind mother, receives us at our birth, and sustains us when born. It is this alone, of all the elements around, that is never found an enemy of man. The body of waters deluge him with rains, oppress him with hail, and

drown him with inundations; the air rushes on in storms, prepares the tempest or lights up the volcano; but the earth, gentle and in fulgent, ever subservient to the wants of man, spreads his walks with flowers, and his table with plenty; returns with interest every good committed to her care; and though she produces the poison, she still supplies the antidote, though constantly teased to furnish the luxuries of man rather than his necessities; yet, even to the last, she continues her kind indulgence, and when life is over she piously hides his remains in her bosom.

Poetry.

Abou Ben Adhem and the Angel.

Abou Ben Adhem (may his tribe increase!)
Awoke one night from a deep dream of peace,
And saw, within the moonlight in his room
An angel, writing in a book of gold:
Exceeding peace had made Ben Adhem bold,
And to the presence in the room he said,
"What writest thou?" The vision raised its head,
And, with a smiling look of sweet record,
Answered The names of those who love the Lord.
"And is mine one?" said Abou—"Nay not so,"
Replied the angel. Abou spoke more low,
But cheerly still, and said, "I pray thee, then,
Write me as one who loves his fellow men."
The angel wrote and vanished. The next night
It came again with a great wakening light,
And showed the names whom love of God had blest,
And lo! Ben Adhem's name led all the rest!

LIGHT AND LOVE.

Light and Love should go together;
When combined they sweetly charm,
More than when, on mountain heather,
Clear and gentle summer weather
Glads the heart with glory warm.

Always were they with each other,
Want of gloom were then to shun?
What of hate to show or smother,
Were they each to each a brother,
Join'd as both were only one?

Did they warmly hover o'er us—
Freely round us halos fling,—
Did they clear the way before us,
Earth would heavenward pour in chorus
Anthems such as angels bring.

Light alone will never render,
To the lofty or the low,
More of feeling, warm and tender,
Than the fair reflected splendour
Of the morning from the snow.

Nor will love alone enlighter
And complete the mind's array,
More than warmth alone would brighten,
And the charms of summer heighten,
In the absence of the day.

But where both abound together
Beams abroad a glory warm;
Not the vale in summer weather,
Nor the blooming mountain heather,
Ever shed so sweet a charm.

Miscellaneous.

PLEASURES CONNECTED WITH the PURSUIT OF SCIENCE.

There is no station in life however lowly but has its sweets, and there is no station in life however high, but has its sorrows. In no instance can sorrow be traced to the pursuit of science. Whatever pleasure it may bring—one thing is certainly true, it brings no sorrows. On the contrary, it is a source of enjoyment to every man who has a taste to pursue it, be that man an humble tradesman or a wealthy merchant. It is a common opinion that no man is scientific unless he is master of all the abstract knowledge relating to astronomy, mathematics, chemistry, geology, and is somewhat versed in Latin and Greek. But where can we find a man so thoroughly endowed with scientific knowledge. There are men who have a partial knowledge of these sciences, and we are among the number of those who do not believe in the old adage, "a little knowledge does more harm than good." That man is scientific who is master of his trade—understands all its principles and practices, or is master of his profession, be it teacher of languages or mathamatics. So much for practical scientific attainments. And now what shall we say regarding more knowledge than merely comes within the scope of a man's business and profession. We have every thing to say that is favorable. The more knowledge a man possesses, he is more likely to be a better citizen and member of society. *Ignorance degrades, knowledge elevates.*

How much pleasure would a shoemaker derive from being acquainted with the principles of the steam engine, or the mysteries of chemistry. He could not turn to the right or to the left in the course of a short walk, without having his mind attracted to something interesting and useful, and calculated to draw his mind from the drudgeries of his own occupation, which, *we regret to say, often excites our sympathies*, as we believe shoemakers are not so well paid for their labour as they should be. And with

regard to chemical science, it would teach many of them to labor in better ventillated apartments, than they in general do. How much pleasure would a tailor, or any other tradesman enjoy, if he possessed some knowledge of geology—it makes no matter how little it may be at first, it is of so attractive and pleasurable a nature, that "the little leaven would soon leaven the whole lump." If he takes a walk into the fields, he is delighted not only with the perspective beauties of nature but with its wonders too. The mute rocks speak to him in a well known tongue, and the pebbles by the river side chaunt to him the song of mountain rill, and cataract. He may lift up a grain of the carburet of iron, and his mental eye sees it in the pencil of the artist sketching the outlines of some immortal work of art. He may lift from beneath his feet a crystal of the magnetic oxide of iron, and his mental eye may figure it transformed into the pen of the statesman, or author; or into the sword of the warrier, or the husbandman's ploughshare of peace. He may lift up a blackish brown powder from beneath his feet, and to others it would be as an idle tale, but his mental eye can trace the chromate of iron adorning in orange or gold colors, the turban of the Tartar or the scarf of the fair. Did space permit, we might here branch out into a most interesting and instructive field, but it is as well perhaps that we cannot do so at present, and we believe that it is far better to present objects to make others think, than to deal with subjects in such a manner as to prevent them from thinking.

Ventilation.—Combustion.—Decomposition.

Ventillation is the art of supplying by artificial means, the required quantity of oxygen for respiration, &c. This is to be accomplished by the air containing oxygen forced into the space requiring it, by means of blowing-machines, worked by steam, or other power; thus keeping up the supply of fresh air as fast as it becomes deprived of its oxygen. By this method we do not supply oxygen to that part of the air from which the oxygen has been withdrawn by respiration—that portion still remains deprived of its oxygen—it is, therefore necessary to remove it, in order to make room for the pure air. This is accomplished by making an outlet for the air at the opposite extremity of the space to be ventilated, to that at which the air enters. Another method depends upon the fact, that air when heated, is rendered lighter, and has a tendancy to ascend. To ventilate a space upon this principle, all that is necessary is that the air should have a means of entering at one extremity, and that at the other extremity it should be heated by means of a furnace, constructed in such a manner as to heat the air as much as possible with the smallest quantity of fuel. The more the air is heated, the greater will be the quantity of air that will enter in a given time, into the space required to be ventilated. It is on this principle that some of the largest mines in England are ventilated. They have two shafts, down one of which the air enters, and is directed along the different galleries, by means of doors properly arranged until it arrives at the other shaft, up which it is caused to ascend by a large furnace placed at the top. In this manner, galleries seven miles in length, have been perfectly ventilated by means of a single furnace.

In the construction of furnaces, the object to be attained, is the perfect combustion of the fuel. Now, this can only be arrived at by such an arrangement as will admit of every part of the fuel receiving a sufficient quantity of oxygen, for converting it into carbonic acid and water. If the supply of oxygen is sufficient, no fuel escapes from the funnel or shaft unconsumed. When, therefore, we observed the dense black smoke emitted from some of our factories. &c., we may well express surprise that men, clever in other things, should allow such a slur upon their ingenuity to exist. There are however, many circumstances in the way of improvement in this particular, which render this subject one of considerable difficulty, viz.—the want of knowledge, for it is obvious that a furnace requires more oxygen at one moment than at another; also that when fresh coals are thrown in, the supply of oxygen is required over or above the fuel, in order to unite with the volatile matters of the coal; at other times the supply of oxygen is required below, or through the fuel. It is impossible to make a furnace self acting in these particulars, and these are points seldom attended to. The remedy lies with the firemen; when they are properly instructed, the smoke nuisance will no longer exist.

It may be enquired,—if we, and all animals, constantly converting a portion of the atmosphere, into carbonic acid, and if all furnaces and fires, and even common candles or lamps, are also converting other portions of this oxygen into the same carbonic acid, how does it come to pass that the quantity of oxygen in the atmosphere is not so much diminished as to render it unfit for respiration?

Oxygen consumed by respiration and combustion, is converted into carbonic acid and water; now plants decompose both carbonic acid and water—converting the carbon of the one, and the hydrogen of the other, into their own substance, and give back to the atmosphere in a free state, oxygen previously combined with these. In this manner a constant and uniform supply of oxygen is maintained in the atmosphere.

Oxygen is the cause of the decay or putrefaction of vegetable and animal matter. The oxygen unites with the carbon contained in

these substances, to form carbonic acid, and with the hydrogen to form water; the nitrogen contained in animal matter unites, in some cases with the oxygen, to form nitric acid; in other instances the nitrogen unites with a portion of the hydrogen contained in the decaying substance, to form ammonia—this it is which give to stale meat its peculiar disagreeable smell In this way Nature converts the solid matter of dead plants and of animals into gases, which becoming diffused throughout the atmosphere, serve as food for living plants, which again decompose these substances, taking from them what they require for their own increase, and giving back to the atmosphere the oxygen employed in the decaying process.

Cruelty to Animals.

Mr. Editor: Could the dumb beast speak or make known its feelings to its master, how often would that master have his feelings hurt for the manner in which he has treated his horse, his ox, or some animal over which he has control! The noble horse was given for the use of man, and to be by him treated kindly. There is perhaps no animal in the service of man of more actual profit, and one deserving of kinder treatment. But how often is he abused! Often is he loaded beyond his strength, and, if unable to move his load, is goaded and lashed by an unmerciful driver, until, with distended nostrils, he stares his master in the face, as if imploring mercy. How many horses are spoiled by being compelled to draw too heavy loads! When a horse is willing to draw all his strength will allow, how careful ought his owner to be not to go beyond this! The lash ought never to be applied to an animal that refuses to draw because his load is too heavy for him to move. The farmer who is always plying the lash to his team, seldom has a team that is well disciplined. I have always noticed that the best teams are those used by drivers who "bawl" and whip the least.

"A merciful man is merciful to his beast;" and he who is not merciful to his beast, generally shows but little mercy to his fellow-creatures. The man who will goad and abuse the dumb beast is very liable to abuse his own family. A horse that is treated kindly by his master, will treat him kindly in return. So with other animals in the service of man. For instance, take the cow that is rather cross about being milked. Few cows are made gentle by incessant beating. There is no more ready way to spoil a cow, when you sit down to draw the milk from her, than to give her a blow with the milking stool, or a kick with the foot, if she should happen to feel a little uneasy about standing. A person may be obliged to chase a cow around the yard several times before being able to get near her, after such unmerited treatment.

I well remember the way I managed with a kicking cow, when I was a youngster. Like o her boys, I was fretful and hasty. Soon after I commenced milking, the cow would begin to step, and sometimes raise her foot as if about to kick. The first thing, with me, perhaps would be to speak out sharply, and if that did not have the desired effect, the milking stool would come next. After this mode of management, the cow grew *no better very fast*. I soon had to tie her legs; and even then, she would contrive to kick over my pail of milk; and if she happened to get loose or break her rope, which was oftentimes the case, it was no easy matter to confine her again. As it fell to my lot always to milk the "kicker," as she was called, I resolved to resort to another method. I accordingly commenced by being mild, (although it was a pretty hard matter;) but the result was, I brought the cow back to be quite a gentle milker; thus proving to a demonstration that kindness to animals will succeed when other means would fail; and I have ever aimed, since then, to be kind to dumb beasts, believing it the only and sure way of retaining the good will and mastery over them.

A. TODD.

—New England Farmer.

The End of Prudence.

The great end of prudence is to give cheerfulness to those hours which splendor cannot gild, and acclamation cannot exhilirate. Those soft intervals of unclouded amusement, in which a man shrinks to his natural dimensions, and throws aside the ornaments of disguises which he feels, in privacy, to be useless encumbrances, and to lose all effect when they become familiar. To be happy at home is the ultimate result of all ambition, the end to which every enterprise, and labor tends, and of which every desire promps the prosecution. It is, indeed, at home that every man must be known by those who would make a just estimate of his virtue, or felicity; for smiles and embroidery are alike occasional, and the mind is often dressed for show in painted hoxour, and fictitious benevolence.

The True Lady.

The facetious Dow, Jr. occasionally throws off some happy hits at the affectations of high life. The following remarks, although they may have but little poetry in them, contain, nevertheless, some wholesome *truths* which would be particularly seasonable to some we could mention. In his advice to young men in search of companions, he remarks: Oh, you

foolish idolaters at the shrine of beauty! Know you not that hundreds of husbands are made miserable by handsome wives, and that thousands are happy in the possession of homely ones? homely without, beautiful within. Alas! what is beauty? It is a flower that wilts and withers almost as soon as plucked—a transient rainbow—a fleeting meteor—a deceitful will-o-the-wisp—suffumigated moonshine. The kind of wife you want is one of good morals, and knows how to mend trowsers—who can reconcile peeling potatoeswith practical or fashionable piety—who can waltz with a dash-churn and sing with the tea-kettle—who understands broomology, and the true science of mopping—who can knit stockings without knitting her brows, and knit up her husband's ravelled sleeve of care—who prefers sewing tears with a needle to sowing tares by scandel with the tongue. Such is decidedly a *better* half. Take her if you can get her, when you find her—let her be up to the elbows in suds of a wash-tub, or picking geese in a cow stable.

My hearers—our text speaks of a lady before a tub. You may think it absurd, but let me assure you that a female can be a lady before a tub or in the kitchen, as well as in the drawing room or parlor. What constitutes a lady? It is not costly dress, paint for the cheeks, false hair, and still falser airs, but it is her general deportment—her intellectual endowments, and that evidence of virtue which commands the respect and silent admiration of the world.—She would be recognized as a lady at once—it matters not where, or in what situation she may be found.

Social Kindness.

How sweet is social affection! When the world is dark without, we have light within. When cares disturb the breast—when sorrow broods around the heart—what joy gathers in the circle of love! We forget the world, with all its animosities, while blest with social kindness. The man cannot be unhappy who has hearts that vibrate in sympathy with his own—who is cheered by the smiles of affection and the voice of tenderness. Let the world be dark and cold—let the hate and animosity of bad men gather about him in the place of business—but when he enters the ark of love—his own cherished circle—he forgets all these, and the cloud passes from his brow, and the sorrow from his heart. The warm sympathies of his wife and children dispel every shadow, and he feels a thrill of joy in his bosom which words are inadequate to express. He who is a stranger to the joys of social kindness, has not begun to live.

I have known one or two doses of jalap to relieve hens entirely from a desire to set; and in my opinion, it is far better for the purpose than the cold water cure. I have known English fowls to lay in three weeks afterwards.

The Charm of Cleniiness.

"A white-yellow shirt on a man, said William Cobbett, speaks at once the character of his wife; and be you assured, that she will not take with your dress pains which she never takes with her own. Then the manner of putting on the dress, is no bad foundation for judging,—if it be careless, slovenly, or if it do not fit properly. No matter its mean quality; mean as it may be, it may be neatly and trimly put on; and if it be not take care of yourself, for, as you will find to your cost, a sloven in one thing is a sloven in all things. The country people judge greatly from the state of covering of the ankles; and if it be not clean and tight, they conclude that all out of sight is not as it ought to be. Look at the shoes; if they be trodden on one side, loose on the foot, or run down at the heel, it is a very bad sign; and, as to slipshod, though at coming down in the morning, and even before daylight, make up your mind to a rope, rather than live with a slipshod wife."

Coffee.

"Coffee as a beverage is either incomparably excellent or incomparably vile. Its quality depends upon the method of its preparation. Roast the berry to a dark brown. Never allow it to become black. During the process of roasting, let it be constantly stirred; so that the whole mass shall be equally roasted. After this process its flavour diminishes. A small quantity, therefore, should only be roasted, for family use, at any one time; not more than enough for two or three days. The berry should be ground rather coarsely. Then by the application of boiling water in the ordinary way, its properties will be extracted in a few minutes. The *coffee grec*, or biggin, is the best article in use for this purpose. The water filters through the grounds of the coffee quickly, and a pure, strong, and delicious drink is thus obtained. The better preparation of coffee is that which is made very strong, and then reduced by the addition of an equal quantity of new milk of the cow. The milk should be added when hot."

To the above by the editor of the Popular Cyclopædia of Domestic Medicine we can add our full assent. The latter clause, directing the use of hot milk instead of cold, is worth remembering. It bears trial.

INCOMBUSTIBLE WASH.—Slack stone lime in a large tub or barrel, with boiling water,

covering the tub or barrel, to keep in all the steam. When thus slacked, pass six quarts of it through a fine sieve. It will then be in a state of fine flour. Now, to six quarts of this lime add one quart of rock or Turk's Island salt, and one gallon of water; then boil the mixture and skim it clean. To every five gallons of this mixture, add one pound of alum, half a pound of copperas, by slow degrees, three-quarters of a pound of potash, and four quarts of fine sand or hard wood ashes, sifted This mixture will now admit of any coloring matter you please, and may be applied with a brush. It looks better than paint, and will stop small leaks in the roof, prevent the moss from growing over and rotting the wood, and render it incombustible from sparks falling upon it. When laid upon brick work, it renders the brick impervious to rain or wet.—[Emigrant's Book.

How to get Rich.

Almost every body wants this information. It is comprised in this advice: Be economical; be industrious; attend to your own business; never take great hazards; don't be in a hurry for wealth; never do business solely for the sake of doing it; and do not love money extravagantly.

To Shake off Trouble.

Set about doing good to somebody; put on your hat, and go and visit the sick and the poor; inquire into their wants and administer unto them; seek out the desolate and oppressed, and tell them of the consolations of religion. I have often tried this method, and have always found it the best medicine for a heavy heart.—[Howard.

The Glanders.

Messrs Editors: While writing, I will mention a fact for your veterinary department. More than thirty years since, the glanders, of the most virulent kind, was amongst the horses of the neighbourhood in which my father lived. Great numbers died off. His horse was taken, and under the belief that he also would die, my father commenced an experiment on him with a strong decoction of tobacco juice, given internally. In a short time, the horse broke out all over his body in sores. These cured up in a month or so, and the horse was sound, soon fatted, and was, as long as I knew him afterwards, a sound and healthy animal. This was the only horse in all the neighbourhood that recovered. Some farmers in this vicinity, noted for fine, sleek horses, give occasionally Scotch snuff to their horses. J. B. Cook.—[Albany Cultivator.

BURNS.

These are of frequent occurrences in families, and often of a very distressing character. A little care will often prevent them It is advisable to clothe children and young females in woolen good, in winter, when there is most danger. Stoves also decrease the liability to burns. We glean the following directions from Imray's Popular Cyclopedia of Medicine:

"The want of presence of mind at the time of the accident often renders the burns more severe than they otherwise would be. How frequently does it happen that females, when their dresses catch fire, instead of taking the most prompt means of extinguishing the flames, generally increase them, by running about screaming for assistance, when they ought to lie down on the floor and roll over and over on the carpet. The erect position of course allows the flames to spread and rise rapidly to the head parts where the fire is most to be dreaded; whereas the horizontal position, on the contrary, has a considerable effect in preventing their extending. In such cases the hearth-rug, table-cover, a shawl, or any woolen article, are the things to be used by any one who happen to be near, for the purpose of extinguishing the flames. It also frequently occurs when the legs and feet are scalded, that instead of cutting the stockings and removing them gently, they are drawn off, carrying the scarf-skin along with them; and the true skin being then exposed, the most excruciating pain is produced.

"The principle on which burns are now treated is that of excluding them from the air; which may be done by covering the burned or scalded parts with flour, or enveloping them with cotton wool. It is in general advisable before employing the cotton, either to immerse the parts in cold water, if their situation will admit of this being done, or apply to them pieces of fine linen dipped in cold water, or vinegar and water, and wetted frequently during several hours, until the pain and heat are removed. But when the burned surface is extensive there is always a sensation of chilliness, which is generally accompanied with shiverings. In this case cold applications would do harm, and they ought not to be employed, even when the burn is slight, if there be a tendency to shivering; nor should they be continued if the patient be not relieved by them, or if they bring on shivering; and they are always improper when the injury is on the breast, belly, or any part of the trunk of the body.

"When the legs and feet are scalded, they should be plunged as soon as possible into cold water, and kept immersed in it a considerable length of time before the stockings are removed. By this means blisters are often prevented.

The blisters, or vesicles, which frequently

make their appearance suddenly, in consequence of a burn or scald, should be punctured with a needle, and the fluid allowed to escape. The burned parts are afterwards to be carefully washed with tepid water before applying flour or cotton.

"The cotton employed should be finely carded, and then applied over the burned surface in thin layers one over another, until there is a covering sufficiently thick to exclude the air, and to protect the parts from undue pressure In mild cases this dressing will be sufficient, and when removed in the course of ten or fourteen days, the part will be found covered with new skin. But if the discharge of matter be very profuse, it will find its way through the dressing, the soiled part of which must then be removed, allowing that which adheres to the skin to remain, and fresh layers of cotton applied with as little delay as possible, in order to prevent the action of the air on the burned parts. The dressing is to be renewed in this manner as often as it may be found necessary, until the cure is completed.

"The application of flour to burned and scalded parts is now preferred in some of the London hospitals to any other plan of treatment This method is preferable to the use of cotton, inasmuch as the flour relieves the pain almost as soon as it is applied, thus rendering the application of cold lotions unnecessary.

THE CHOLERA.

The following was sent us some time since, but would seem to be in place at present. Its advice to clean up all filth is worth heeding, not only in city but in country:

MESSRS. EDITORS:—The southern atmosphere is already polluted with the breath of this dire disease. It only waits for the ice to yield—the snow to melt—the miry pools to send forth their fogs—the pens of filth and the hog trodden paths to thaw out, to render its presence more secure, and its aim more deadly here, than in the northern latitudes. A few more weeks, a few more months at longest, and its presence may be looked for here in sections, and more or less every where. Its descent into uncleanly and damp situations is as natural as is the law of gravity to bring a cast up pebble to the earth, and those who may stand nearest its haunts may perhaps be first to feel its fatal pangs.

Every filthy mudhole, pond and spawny lake, with mucky, sandy shores; sloughs, creeks, muddy ravines, privies, dunghills and heaps of mouldering straw, are rife with its influence. All collections of dirt and filth—decomposing substances of every kind, in and about dwellings, are most sure to invite the evil. Rum-shops and greasy barrooms, presenting brawling dissipation, in country, town and city, are among its congenial haunts, there too it points out, one by one its fated victim. Ever shy of neatness and good order, it often passes by, unharmed, the shady suburbs and clean streets of the city; delighted with swine to mingle and with the stench and souring filth thereof.

We are liable to, and may err in opinion. My own is that the proper precautions are, to *timely* remove, as far as possible, the cause, and put these matters to rights—each doing so upon his own premises, with a determination to "prepare for the enemy in time of peace"—also encourage it in others who are inclined to be negligent.

A strict observance of good habits—neither eating nor drinking anything that would be likely to destroy a healthy action of the stomach—a clean, shady dwelling and out houses, a pure well of water, a clean door-way, clean barn-yard, a clean conscience and sound sleep; an active mind, honorably pursuing its calling, and with moral courage, its every duty, are perhaps the best of all safe guards in the prevalence of epidemics.

February 7, 1849. ANTI-PROCRAST.

Superiority of Brown Bread over White.

In the month of June, 1847, when breadstuffs were nearly at their maximum, in Great Britain, and bread sold at from 11d. to 1s. 1d. the 4-lb loaf, an article was published in England "On the Nutritive Qualities of Bread in Common Use," in order to show the fallacy of common opinion, by embodying the leading points of a paper written by that able, analytical chemist, Professor J. Johnston, then of Edinburgh. From the period that the older organic chemists announced that all the constituent elements of the human and animal frames were built up, and supported by, the assimilation of certain specific matters contained in the food with which each was furnished, it became a primary object with them to subject every article of such food to severe analysis. *Bone*, *muscle*, and *fat* constitute the three chief materials of animal structure, the blood being the vitalized fluid which contains, and conveys through appropriate channels, those elements that are destined for their ultimate supply.

Bread ranks among the chief of the nutrimental substances destined for the support of the human frame; and therefore, particularly at the time of the late or anticipated scarcity, it became an imperative duty not merely to secure to the public a genuine and pure article, but to point out the means by which pure wheaten meal could be most economically prepared, and so manipulated as more effectually to nourish the body, and promote its general

health. The Professor announced that the best and most nutritious bread could not be made from the "whites," or household flour, but only from the "whole meal," consisting of the entire wheat grain ground up in one way, and used as it comes from the millstones, unsifted, and therefore containing all the bran. He also showed by calculation that 1,000 pounds of such whole or entire meal contains of the elements of—

Muscular matter, . . .	156 lbs.
Fat, ...	28 „
Bone material, ...	170 „
	354 lbs.

Whereas, in fine flour are found only of

Muscular matter, . . .	130 lbs.
Fat, ...	20 „
Bone material, ...	60 „
	210 lbs.

If, then, the real elements of food, convertible by assimilation into muscular flesh, fat, and bone superabound to the extent of 144 lbs. in whole meal, and, as an inevitable consequence, to pure brown bread, when compared with the white, tasteless, artificial compound made by the white and "fancy" bread bakers. Some allowance must, however, be made for constitutional varieties; for it is proved, that in many instances bread which contains all the coarse bran becomes flatulent and too laxative, in consequence, perhaps, of irritation produced by the mechanical action of unreduced scaly particles. In such cases, the best "one-way," or grist flour, obtained from the mill, with the separation of the rough bran only, should be substituted.—[Selected.

READ TO IMPROVE.—Any young farmer who will make it a point to read a little every day, from some approved agricultural book or paper, will have profitable food for reflection as he *treads the furrows—and will find his mind* rapidly advancing in useful knowledge connected with his profession.

SILK.—The quantity of silk used in England alone amounts each year to more than four millions of pounds in weight! for the production of which myriads upon myriads of insects are required. Fourteen thousand millions of animated creatures annually live and die to supply this corner of the world with an article of luxury. If astonishment be excited at this fact, let us extend our view to China, and survey the dense population of that widely-spread region, whose inhabitants, from the Emperor on his throne to the peasant in his lonely hut, are indebted for their clothing to the labours of the Silk Worm. It is truly remarked by Scott's excellent paper, "that imagination, fatigued with the flight, is lost and bewildered in contemplating the countless numbers which every successive year spin their slender threads for the service of man."

MUSTARD PLASTERS.—When a mustard plaster is to be applied, there should always be a piece of clean muslin or gauze placed between it and the skin, unless the contrary is expressly ordered by a physician. The mustard acts quite as powerfully, and the whole can be removed more quickly, and without the disagreeable effects of dropping it about.

HOW TO REMOVE DUST OR LINT FROM VELVET OR WOOLLEN CLOTHES.—Dust or lint may readily be removed from velvet or woollen cloth by wiping it, while dry, with a piece of ipe, without reference to color.

SAVE THE URINE.—The urine from cattle is worth as much as the solid droppings. Any farmer can easily secure the whole, both in summer and winter, by having a bed of turf or vegetable matter deep enough to catch and retain the liquid. The watery portion soon evaporates, while the solid matter, amounting to about 12 per cent., is incorporated with the turf, and held till needed for use.

Markets, &c.

LIVERPOOL CORN MARKET, June 16.—The market was steady during the week, but with only a moderate amount of business passing. Flour slightly advanced yesterday, best Western Canal bringing 22s. to 23s. per barrel. Canadian 22s. 9d. to 23s. Wheat advanced 2d. per bushel.

NEW YORK, July 2.—There is a fair demand for Western and New York State Flour, for the east and for export. The prices range from $4.12 to $4.75 per barrel, according to quality. There is a fair inquiry for Wheat, at 75 cents to $1.25 per bushel, according to quality. There is a fair demand for Ashes of both sorts. Pearls $5.60, Pots $5.65. Lard is in fair demand, at 6 to 7 cents per lb.

TORONTO, July 4th.—Flour per barrel 15s. to 20s. Oatmeal per barrel 16s. to 18s. Wheat per bushel 3s. 6d. to 4d. Rye per bushel 2s. 6d. to 3s. 2d. Barley 1s. 6d. to 1s. 9d. Oats 10d. to 1s. Peas 1s. 6d. to 2s. Potatoes 2s. to 2s. 6d. Onions 3s. 6d. to 5s. Fresh Butter 6d. to 7½d. per lb. Eggs, per dozen, 5d. to 6d. Beef per cwt. 12s. 6d. to 17s. 6d. Mutton, per lb., 2½d. to 4d.—Veal 2½d. to 3d. Bacon, per lb., 3d. to 4d—Hams, per cwt., 25s. to 30s. Lard, per lb., 4d. to 4½d. Hay, per ton, 35s. to 45s. Straw, 30s. to 37s. 6d. Timothy Seed, per bushel, 6s. to 8s. Turkeys, each, 1s. 3d. to 3s. 9d.—Geese, each, 2s. 3d. to 2s. 6½d.