



The Field.

Familiar Talks on Agricultural Principles.

THE SOIL.

MENTION has been already made in the course of these "Talks," of the mode in which the soil on the earth's crust has been formed. In our issue of February 15, a brief account was given of the natural processes by which rocks of various kinds are gradually dissolved and disintegrated. It will be interesting and instructive to notice more in detail the steps by which nature prepares the surface of the earth for vegetable growth, and preserves the fertility of the soil when plants are established in it. In many respects the most skillful farming is but a distant imitation of nature, and we are too many of us at an almost immeasurable distance from our teacher. The landscape about us is an open volume, which we have only to study, to understand the great principles of scientific agriculture. People who are prejudiced against "book-farming," forget that nature is a great book,—that whatever any good farmer knows about his business has been derived from the study of that book,—and that if the printed wisdom of agricultural publications be the record of what is taught in nature, he is a fool who undervalues and despises it.

Besides the forces by which rocks have been crumbled and changed into soil, there are certain processes of growth which have a most important influence. Not only do sun and air, cold and moisture, act upon rocky formations, but plant life may be said to make an attack upon them. Thus lichens will fasten upon the exposed surface of rock. These plants derive most of their food from the air. Generations of them grow, die, and decay. A kind of mould is thus formed. Mosses take the place of the lichens. In the course of a few years, various natural grasses establish themselves as the successors of the mosses. By and by, the seeds of shrubs and trees are wafted by the winds or deposited by birds upon the once bare and barren rock. Larger forms of vegetable growth take root, and these too draw a large proportion of their food from the atmosphere. Year after year, crops of leaves are borne. These fall to the ground, decay there, and add to the bulk of the soil. For countless centuries, this kind of process has been going on. By the decay of leaves, fruit, roots, and trunks, the ground has become covered with a coating of vegetable mould, and there are many localities where the solid rock still underlies, at no great depth, the tillable surface soil. In other places, the rocky foundation has gradually crumbled or been dissolved; while on the great fertile plains, and in the rich valleys, the soil has been washed by streams, drifted, or been deposited by the action of a deluge. It is from this last-named circumstance, that some soils are called *diluvial*.

A striking illustration of the process just described is furnished by the fact that the very lavas ejected from Vesuvius, Etna, and other volcanoes, become, in an exceedingly short space of time, coated with soil, and covered with vegetation. These lavas come out of the mountain craters molten and red-hot. It is plain that they can contain no vegetable matter. Yet they have not been long cooled, before the wild fig-tree and other plants, fasten upon them, send their roots and fibres into the interstices, grow and produce woody matter, which decays, and in process of time forms a coating of mould. The material of which this woody matter is formed, must evidently have been obtained from the air, since it did not exist in the soil.

When the native forests of a new country are cut down, and the land is cleared up for cultivation, the soil is almost uniformly found to be fertile. In most parts of Canada, this virgin soil will bear large crops of wheat and other grains, for many years in succession, without manure. This is owing to the wealth of productive material treasured up in the way above described. Nature is frugal and saving. She does not go on the "hand-to-mouth" principle of living, but always takes care to keep her expenditure so far within her income, that she is constantly laying up. Our bad system of farming is very like the course of a spendthrift, prodigal son,—who having inherited the wealth an industrious careful father has been patiently saving for many years, very soon runs through the property to which he has fallen heir. Thus do our settlers quickly use up the store of precious fertilizing matter, which has been slowly accumulating in the soil, and having wasted their substance in riotous farming, begin to be in want. They can't raise the crops they once did. And the parallel often goes farther. They are unable to make a living on their exhausted farms, and so they sell out, and go to a "far country," there to pursue the same wasteful system, upon another piece of new land. Now we have only to farm as nature farms,—to see to it that we return to the soil each season a little more than we take from it,—and we shall preserve our land in a condition of improving fertility. Nature consumes on the soil what is yielded by it, and constantly adds to this, valuable substances drawn out of the atmosphere by the leaves, which are as it were, continually sucking nourishment from the air. It is impossible to farm successfully and profitably except on this principle. By consuming what is produced by the land in such a way, that it shall be returned to the land from which it grew, we can preserve its fertility. This is done by stock-feeding and manure-making. If produce be sold off the farm, fertilizing material must be got from some other source, to make up for what is removed, or plainly, *the soil will grow poorer*. Is it not strange that people cannot see this? How stupid it is to expect in some way or other to circumvent and cheat nature. Like dishonesty of every kind, this dishonest treatment of the ground we till, brings in the long

run a punishment with it. It will be one of the main objects of these "Talks" to impress this lesson, and to urge the faithful application of those principles which are acted on by nature, and must rule in art, if our efforts are to be rewarded with success.

Causes of Unproductiveness in Soils.

(Concluded from page 66.)

4. Soils are unproductive when a thin layer rests on a bare rock.

"I am acquainted with several localities where the soil is of excellent quality, but too near the rock to be productive. We should bear in mind in discussing the state of agriculture, in different countries, or districts, that this obstacle will baffle the utmost skill of the agriculturist, though he might fertilize the barren sand, or reclaim the unhealthy swamp."

5. Soils are unproductive when they rest on impervious or excessive dry subsoils, which are not easily drained efficiently.

What renders many dry soils difficult to change their chemical and mechanical character, so as to render them in a higher degree productive and profitable, is the thick and tenacious subsoil on which they rest. "Clay soils of that description occur in the lias formation, where they are known as scourery land, on account of the tendency of the herbage to scour sheep and cattle. Some time ago I made an analysis of notoriously bad land, from Shepton-Mallet, Somersetshire. The soil contained in 100 parts:—

Moisture	4.64
Organic matter and water of combination	14.40
Oxides of iron and alumina and phosphoric acid	14.45
Sulphate of lime	.28
Carbonate of lime	14.80
Magnesia	.08
Potash and Soda	.03
Insoluble siliceous matter (chiefly clay)	49.96
	100.0

"This soil had rather a dark colour, which was due partly to protoxide of iron, partly to the large proportion of organic matter, which enters into its composition. Although not injurious in itself, an excess of organic matter, as well as protoxide of iron, indicates a condition of the land which is unfavourable to the healthy growth of plants. In a porous, well cultivated soil, freely penetrated by the atmosphere, the accumulation of organic matter never becomes excessive, nor does such a soil contain much protoxide of iron. The presence of the latter, in considerable proportions, always shows that the soil is not sufficiently aerated to produce a healthy and nutritious herbage."

The chemical composition of this soil is by no means seriously defective; it contains all the elements of plant food: The great drawback of the lias soils is their thinness, and the deep stratum of indurated clay on which they rest. The only remedy seems to be thorough underdrainage, and subsoiling, so as to

take off the superfluous water, and allow the free admission of air to the greatest degree possible.

6. Soils are unproductive when their physical characters are bad.

The following is an analysis, made by Dr. Voelcker, of a soil in Gloucestershire, that had been laid down to pasture five years, and at first produced luxuriant herbage, but at length became almost worthless, although frequently dressed with different kinds of manures:—

Moisture	4 04
Organic matter and water of combination	11 69
Oxides of iron and alumina and phosphoric acid	18 67
Carbonate of lime	19 63
Magnesia	1 33
Potash and Soda	1 01
Insoluble siliceous matter (clay)	55 21
	100 00

This soil is rendered unproductive, not in consequence of any marked deficiency in the constituents of plant-food,—for its chemical constitution would place it among fertile soils,—but from its physical condition: a heavy, wet surface resting on a thick and impervious bed of clay. What this soil wants is air, not manure, and draining and frequent subsoiling are the only adequate remedies. "On land like this it is only waste to apply manures, especially if the season should be dry. Artificial, such as guano or ammoniacal salts, these do positive harm; and in wet but warm seasons, water itself is the best means of developing, so to speak, the natural resources of the land, and encouraging the growth of the herbage. It is not for me to say whether it is profitable to put such land down in permanent pasture, or to break it up and adopt upon it a rotation suited to heavy clay land; but of this I am quite certain, that the steam cultivator would do wonders on these cold, stiff clays, for they contain, practically speaking, an inexhaustible store of the mineral food of plants, which, however, has to be unlocked as it were by air. The more roughly stiff clays are broken up the better; the less the farmer meddles with the land when once broken up, the more effectually the air will find access into the land. No instrument can possibly pulverise clays so effectually as air and frost, if time be allowed."

The intelligent reader will gather much useful information from the results of the preceding investigations, and while appreciating the valuable light which analytical chemistry throws on the composition and properties of soils, he will see how necessary it is to pay sufficient attention to their physical condition and capabilities also. Upon a properly balanced union of these two modes of investigation, the healthy progress of an advancing agriculture mainly depends.

Plea for Permanent Grass Lands.

OBSERVATION and experience from my youthful years convince me that lands natural to grass, and desired for its production, should never be disturbed by the plough, but their fertility kept up by top-dressing of animal manure, ashes, plaster, muck, earth, or whatsoever enriches—pastures at almost any time; mowing lands soon after the hay crop is removed, that the surface dressing may act upon the grass as the earth does upon other crops under cultivation; also affording protection and warmth during the cold and wintry season. Natural meadows—that is, the level land bordering on streams and rivers—are undoubtedly best for mowing, and can usually be made smooth without even a first ploughing, and are sometimes found self-sustaining; also, lands receiving the wash of hills, roads and barnyards, often keep up their fertility without any direct application, though the hay crop is continually taken off. Lands less favoured naturally, must be treated artificially, and strengthened and replenished by irrigation, or some fertilizing substance applied to the surface. Ploughing seems to destroy the life and take away the heart of the land for grass, which almost always soon runs out after it, and must be richly manured and thickly seeded, and the process often repeated, in order to keep it up.

The custom with farmers here, is to plough annually a small piece in their mowing lots—we have but very little natural meadow land—put on the entire manure of a large stock, get a good crop of corn, followed by oats, with new seeding, then a fair hay crop for about two seasons. If the grass has been improved, it has not been done by the cast iron plough, but by the liberal manure. A less portion put on as a top-dressing would have resulted in a greater and more permanent benefit, besides the labour of getting off the stones and preparing it for the mower. It is also the custom to plough a piece in the pasture, sow to buckwheat, followed by oats, with new seeding, and is then assumed that the land is made better, been enriched, while in fact it has been made poorer to the amount of the two crops taken off, besides otherwise injuring it for the production of grass, as a few years will show.

This unnatural method of improving old pastures by repeated ploughing and cropping, has in many instances been fairly "run into the ground," and many of these naturally fertile and grassy hills have become poor and waste places, while others near by, which have never been poisoned by the plough, nor too closely fed, still, to a good degree, maintain their productiveness. If an old pasture could be spared a few years to rest, and to grow up to white birches or other trees, whose roots should penetrate and pervade the compacted soil, while their limbs and leaves would give resting and shade in summer, and warmth in winter, and altogether rarifying, and aerifying, ameliorating, and renewing its condition, then cutting off its young growth, and you have the best kind of new ground and good pasture for years, enriched by shade and rest, fallen leaves, and decaying stubs and roots. The first ploughing is the beginning of evils, and should be never done where grass is desired. To hear an old farmer, in passing over his deteriorated mowing or pasture lands say "the grass has run out here, this needs ploughing," is strange logic to me. I believe in Cincinnatus and the plough, but on grain and not grass land. The sage saying of the Scotch minister—(our friend John Johnston will agree in this)—when taken by his parishioners, in time of drought, around with them from field to field, to pray for rain and the blessing of heaven upon the parched and feeble crops, coming to a very poor and neglected field, he said to his brethren, "Pass on, pass on; it will be of no use to pray over this land—it needs manure!" This was common sense and philosophy, as well as piety. It is somewhat of ploughing as of praying to make grass grow on a poor or run-out field—ploughing will do no good; it needs manure.—A. P. VIETS, in Country Gentleman.

Fixed Facts in Agriculture.

THESE may be assumed as fixed facts in Agriculture:

1. All lands on which clover, or the grasses are grown, must either have lime in them, naturally, or it must be artificially supplied. It matters but little, whether it be supplied in the form of stone lime, oyster-shell lime, or marl.
2. All permanent improvement of lands must look to lime as its basis. Lands which have been long in culture, will be benefited by applications in the form of bone-dust, guano, native phosphate of lime, composts of fish, ashes—or in oyster-shell lime—or marl—if the land needs liming, also.
3. No lands can be preserved in a high state of fertility, unless clover and the grasses are cultivated in the course of rotation.
4. Mould is indispensable in every soil, and a healthy supply can alone be preserved through the cultivation of clover, and the grasses, the turning in of green crops, or by the application of composts rich in the elements of mould.
5. All highly concentrated animal manures are increased in value, and their benefit prolonged, by admixture with plaster, or pulverized charcoal.
6. Deep Ploughing greatly improves the productive powers of a variety of soil, that is not wet.
7. Subsoiling sound land, that is, land that is not wet, is eminently conducive to increased production.
8. All wet land should be drained.
9. All grain crops should be harvested several days before the grain is thoroughly ripe.
10. Clover, as well as other grasses, intended for hay, should be mowed when in bloom.
11. Sandy lands can be most effectually improved by clay. When such lands require liming, or marling, the lime or marl is most beneficially applied, when made into compost with clay. In slacking lime, salt brine is better than water.
12. The chopping or grinding of grain, to be fed to stock, operates as a saving of at least twenty-five per cent.

14. Draining of wet lands and marshes adds to their value, by making them produce more and better crops—by producing them earlier,—and by improving the health of neighbourhoods.

15. To manure or lime wet lands, is to throw manure, lime, and labour away.

16. Shallow ploughing operates to impoverish the soil, while decreasing production.

17. By stabling and shedding stock during the winter, a saving of one-fourth of the food may be effected—that is, one-fourth less food will answer, than when such stock may be exposed to the inclemencies of the weather.

18. A bushel of plaster per acre, sown broadcast over clover, will add one hundred per cent. to its produce.

19. Periodical applications of ashes tend to keep up the integrity of soils, by supplying most, if not all, of the inorganic substances.

20. Thorough preparation of land is absolutely necessary to the successful and luxuriant growth of crops.

21. Abundant crops cannot be grown for a succession, unless care be taken to provide and apply an equivalent for the substances carried off the land in the products grown thereon.

22. To preserve meadows in their productiveness, it is necessary to harrow them every second autumn, apply top-dressings, and roll them.—North Carolina Farmer.

The Cultivation of Live Fences.

To the Editor of THE CANADA FARMER:

SIR,—Your suggestion that the mode of cultivating live fences, adopted by me, might be interesting and instructive to the readers of THE CANADA FARMER, and at the same time be an inducement to some parties to adopt the same method, before the material for fencing in common use shall have become exhausted, I cheerfully comply, and shall endeavour to give my experience in as clear and lucid a manner as the nature of the subject will admit. The principle which I have adopted in setting the plants, may be termed the ditch and mound process; the ditch serves a double purpose, the first, to furnish material for making the mound, or covering for the plants, as well as for their protection; in the second place, it supplies an open drain for taking the waters from the adjoining land. The first object in making a fence is to have it straight, and as level as the face of the ground will admit. After setting stakes on the line on which you intend your hedge to grow, you will place a cord four inches from the stakes, and another eighteen or twenty inches from the first; these cords will show the width of your drain; then cut the turf with a spade along each inside the cords, at an angle of thirty degrees, or more, according to the nature of the soil. You will next proceed to make a bed or flat, upon which to lay your sets, by taking a spit off the turf and lay it in line with your stakes, sloping back to preserve the angle as indicated above, and one foot wide, and showing a level surface. You are now prepared to place the sets which should be laid flat, and but six inches from each other. The sets should be cut six inches from the root, and laid as to project one inch from the face of the mound, and then take another spit of turf and lay grass side down, upon the sets, still preserving the same angle. Care should be taken that the covering be made compact, so that the plants may not suffer from draught. You are now ready to complete the mound, which should be two and a half feet on the base, and at least one foot deep on the sets. The bottom of the ditch should be made on an incline, that the water may run freely from the drain. Although the hawthorn is a hardy plant, it does not relish cold feet, or a surplus of drink. The soil on which my hedge is planted, is a stiff clay, which is not so favourable for a rapid growth of plants, as a more sandy or gravelly soil; yet I have not lost one plant in every hundred that I have planted. I omitted to state that the turf left between the edge of the ditch and the sets should be shorn off the grass of sufficient depth to prevent it growing. The ledge thus formed will serve to catch the earth that may be washed or crumble from the face of the mound, and being deposited in the ditch. As this letter is somewhat lengthy, I will at some future time, give some remarks regarding the treatment which is necessary, and its cost.

C. YALE

St. Catharines, Feb. 27, 1866

The Dignity of Agriculture as a Pursuit.

[PART OF AN ADDRESS DELIVERED BEFORE THE HAYSVILLE FARMERS' CLUB.]

FARMING may legitimately claim the high attributes of a manly, honourable, and independent pursuit. Manly, because it evokes the physical requisites of endurance. Hence the hardihood which has ever made the peasantry of a country its best defenders. Honourable, because its pursuit compromises not the dignity of the most eminent of our fellows. Independent, because the farmer solicits no man's patronage or protection. History indicates that the first symptoms of the decline of nations can be traced to their neglect of agriculture; and it is but fair to assume that the past may be regarded as a tolerable index of the future. Now, without prognosticating aught so disastrous to Canada, it is pitiful to observe a too prevalent dislike, in many of our young men, to become yeomen of the soil,—a contempt for the occupation of their fathers. The truth of these assertions is best illustrated by the swarm of improvised M. D's., and school teachers, who cannot even astound with "words of learned length and thundering sound," inundating the land. Add to these a host of young fellows behind shop counters, occupied in doing that which their sisters could perform equally well, and certainly much more gracefully, and you have a state of things to contemplate far from satisfactory. We are quite aware that all professions and trades are the essentials of communities. But Canada must claim for agriculture the first place in that economy. We can only trust that the children of the soil who desert it for, probably, less honourable pursuits, may inherit the patient industry, energy, and fortitude which enabled their sires to conquer a homestead from the wilderness. Probably several professions demand higher intellectual attainments than is absolutely needful to the farmer; but there is no pursuit in which a sound discriminative judgment is more necessary. The science of chemistry, to a certain extent, is indispensable to the farmer, and I would suggest the propriety of our common schools teaching, at least, a simple elementary course of that science. A boy might be made conversant with the constituents of the air he breathes, something of chemical affinities, the gases caused by fermentation, the different chemical acids for their retention, evaporation, formation of dews, &c.

A Curiosity in the Plough-Line.

The following somewhat sensational item of Agricultural intelligence is communicated to the *Iowa Homestead* by a correspondent:

"I have thought it would be interesting to your numerous readers, and especially the farming community, to learn of a late invention of L. B. Hoyt, of Cedar Falls, Iowa, which consists of a glass mould board for a plough. Among the numerous inventions for the benefit of the farmer, and labour-saving machines, this plough promises to be a greatest blessing. This plough was patented Jan. 9th, 1856, and promises to effect a great reform in tilling the soil, as the experiment on its trial last fall is proven by many witnesses, and in soils of various conditions it exceeded the most sanguine expectations of its friends, and it is thought will supplant all other ploughs now in use, especially in the Western and Southern country. The inventor claims among other things for this plough, that it will scour under all circumstances and in all soils—it will run one-third easier, cost less money, never rust by the rain or dew, or other exposure; hence is adapted to all soils where metal boards will not scour or clean. It has been said that some farmers have left the Des Moines Valley, for the reason that they could not till the soil with such ploughs as were in use, and if so, this is just the plough for them, and all they can desire in a plough."

The idea is certainly a brilliant one!

PROFITABLE FARMING.—A friend states that Mr James Peacock, of Walworth, Wayne Co., N. Y., grew last season, on four and one-half acres of orchard, \$3,384.90 worth of fruit. He offers \$50 reward to the farmer who will beat that. This is hard to beat, in a season when apples are scarce, but read this:—Messrs. J. & G. Greenway & Co., of Syracuse, N. Y., harvested last season from four acres of hop garden, \$900 per acre—making \$3,600 from four acres. This beats the fruit orchard—and in a season when hops were a failure.

Stock Department.

Lambing.

As the season when sheep produce their young is fast approaching, a few remarks on the subject of lambing will not be deemed inappropriate:

Among the principal causes of the fatality that so often affects ewes at this critical season, ranks foremost what is understood by the term "*bad condition*." Not emaciation necessarily; as bad condition may be associated with plethora, but a general unhealthy state of the system, brought on probably by neglect and deficient diet for some time past; shortness of keep is one of the misfortunes which no foresight can always obviate; but the farmer should always strain a point to keep his ewes in good order, not by any means to fatten them, but to preserve what is well understood by "*healthy condition*." A moderate quantity of good hay, with a fair proportion of well harvested pea haulm or straw, cut and steamed when practicable, will compensate for a bad supply of roots, and should always be liberally used in connection with them. The enormous percentage of water in roots renders them objectionable as the almost sole article of diet, particularly as the time of parturition approaches, when the bulk necessary to furnish the requisite nourishment is inconvenient to the animal, and a drier food, proportionately nutritious, is desirable.

No amount of care, to insure a high state of health, can be deemed superfluous, as under the most favourable circumstances the period of parturition is a crisis in the animal economy. The extraordinary excitement, nervous and muscular, with the necessary exhaustion, tell always most injuriously, and often fatally, on debilitated constitutions.

The ewe continues in labour longer than most other animals; hours are frequently passed without any progress being made, while the pains occur at frequent intervals, not so strongly as in those animals in which the act is more rapidly performed, and weakly subjects frequently succumb during labour, or immediately after it, never recovering from the collapse. In other instances, excessive reaction follows, resulting in fever, which is almost uniformly fatal. This vascular excitement has its centre in the uterus, the lining membrane of which, after death, is found nearly black and rotten. The affection may be designated "*inflammation of the womb, or puerperal fever*," and virtually consists in an extension of the uterine irritation to the whole nervous system, and an excessive vascular action is a natural consequence. Subjects of the disease die at various periods, from four or five hours to a couple of days, after lambing; the symptoms are—uneasiness, panting, and alternately grinding of the teeth; the external parts continue red and swollen, and the discharge of dark coloured fluid, partly composed of blood, is constant.

The extreme fatality which commonly attends this disease, and the rapidity of its course, render any of the ordinary anti-inflammatory plans of treatment practically useless, as none but powerful agents have the slightest chance of acting in time to avoid the usual results. Aconite, a valuable remedy in all inflammatory attacks, is the only one, perhaps, that can with confidence be suggested for these cases; and if employed when the first appearances of uneasiness are seen, its effects are marvellously rapid. In Europe, Fleming's tincture of aconite is mostly used, and the dose carefully apportioned. The most simple course is to put one drachm into a pint bottle, fill up with pure water, and give a small table spoonful, say three times in the course of two hours, or even every half hour, until a quiet condition follows, after which an occasional dose will suffice to keep up the sedative effect; a single dose has often arrested the excitement at once; and since in very decided cases not more than two would be necessary to produce a

marked sedative action. During the treatment, the ewe should be housed and kept warm, dry and particularly quiet. Sheep are especially sensitive to interference, and, at the last gasp, will struggle to escape the touch of a stranger.

Unnecessary violence is a fruitful source of loss among ewes. When unmistakable symptoms of lambing are observed, the ewe should be carefully watched, but not interfered with, as the possibility is that nature will finish her work without extra aid, which, when prematurely and injuriously rendered, will be sure to do harm, sometimes to a fatal degree. If, however, after a reasonable time, no advance of the fœtus takes place, the shepherd may carefully examine its position, and if all be right, leave matters alone; if the mother be exhausted, or the fœtus wrongly presented, judicious assistance is then indispensable. But this should be done with much care, with a view to aid, rather than force, nature, and everything approaching to violence (so often fatal) should be studiously avoided.

Inversion of the womb, generally produced by straining, sometimes by unskillful handling, is occasionally fatal, and always permanently injurious to the animal, especially for breeding. The protruding viscous should be carefully cleaned and returned, the animal's hinder parts being subsequently propped up, to facilitate its retention, and a dose of the aconite mixture will usually prevent a recurrence of the straining efforts. Where the womb is obstinately everted again and again, a strong suture is sometimes placed across the external opening, with success; or in the event of this failing, a ligature may be placed round the neck of the organ, close to the quarter, and the protruding part excised. This operation is often successfully performed, although there is more reason to fear the result of inflammation after excision, than difficulty in returning the uterus to its situation again. Ewes that survive these operations should be at once fattened for the butcher.

After delivery has been effected, and the ewe is apparently doing well, there are occasionally some minor difficulties to be surmounted. Among them are swelling and hardening of the udder, with the formation of abscess. This disease often occurs in cold, wet seasons, and though seemingly of trifling importance at first, a considerable number of animals die from the irritation, and many are very seriously injured. At the commencement, when the swelling is first observed, the shepherd should apply fomentations; the animal suffering should be placed under shelter, and have plenty of dry straw to lie on; a small dose of Epsom salts (one ounce) may be given, and as soon as the swelling and heat have subsided, a little stimulant may be used with friction; an ointment composed of iodide of potassium with twelve parts of lard, is very good for the purpose. If the sheep be suffered to remain on the cold, damp soil, the circulation in the gland is ultimately arrested, and the part becomes a dead mass, that rots by degrees away, gradually impregnating the system with a quantity of decomposed matter. In such cases, a free dissection of the diseased part is the only course that promises a chance of success; most commonly, however, the subject sinks, from the weakness engendered by the combined irritation and poisonous influence of the diseased organ.

A successful lambing season, in a great measure depends upon a properly constructed, well defended ewe pen, a sufficient quantity of nutritious food, and, above all, a careful shepherd, well acquainted with his duties, and conscientiously desirous of performing them—one who will watch for symptoms of a possible mischief, and hasten to repair it, who is scrupulously clean, and light and tender in his touch in rendering needful assistance. Furnish such a man with a bottle of aconite mixture, material for gruel, a few simple comforts, and facilities for heating abundance of water, and there will be no need to apprehend adverse circumstances out of the question—any very "*bad luck*," during the lambing time.

MANGE OR BARN ITCH.—This is often a troublesome disorder. It is contagious and liable to run through the whole herd if not arrested. It makes its appearance more frequently about the head of the animal, but extends to other parts of the body, causing much annoyance to stock and giving it a very unsightly appearance. The disease is very easily cured, by mingling sulphur with oil or lard, and applying the mixture to the diseased parts. Sulphur is a sovereign remedy for many diseases of the skin, and is used internally with success by many stock-men for promoting the health and thrift of domestic animals. When used for this purpose it is mingled in small quantities with salt and is readily taken in this way. Animals kept upon dry food for six months of the year are more liable to contract diseases on such food than while at pasture, and sulphur fed in the way suggested, serves an important purpose in purifying the blood and in promoting health.—*Utica Herald*.



Shorthorns.

In the above illustration, which we have copied from a British exchange, that clever animal draughtsman—Harrison Weir—has admirably depicted what may be termed the generic type of a Shorthorn herd. The location and surroundings are also in excellent keeping. For, the natural home of the Shorthorn is, as the artist has placed it, among fertile meadows and fat pastures. The breed is not, however, confined to such favorable and exceptional circumstances, but will thrive wherever there is good grazing. In Britain, the Shorthorn may be found in its purity, as well as intermixed with other breeds, from the Orkneys to the Land's End; while on this continent, its dissemination and its increasing popularity are the certain accompaniments of improved agricultural practice. It is only necessary carefully to inspect the cattle at our great annual Provincial and County Fairs, or to mark the animals which furnish the beef for our cities, to be convinced that the Shorthorn is surely altering and improving the character of our cattle. A similar condition of things obtains in the Australian Colonies. The breed, therefore, eminently deserves to be denominated *cosmopolitan*.

There is something very enticing in a Shorthorn, and it is therefore not surprising that so many have been induced to become breeders. An indistinct notion would seem to exist on this subject, leading people to imagine that Shorthorn breeding is something which comes by nature, like driving a conveyance. Instead of this, it is one of the most intricate arts that any man can venture upon; we may almost call it a science, and it demands special qualifications in those who follow it, which are rarely combined in one individual. Hence, no doubt, the many failures; and hence also the brilliant successes which have attended the operations of certain breeders. Enthusiasm, judgment, energy—a power to discriminate between the precious and the vile—a determination

to have females of good families, and sires of the best blood—a resolution to allow no parsimonious policy to mar success—are some of the pre-requisites which the first-class breeder must possess. Some of the finest specimens of the Shorthorn race have been produced by men whose lot it was to live by farming; while, on the other hand, we know of magnificent animals having been bred by men to whom farming was a pastime and a parenthesis. Good blood is the grand desideratum—the great lever by which breeds are elevated and improved. It makes itself felt wherever it is, and whoever uses it. It is independent of social position, and asserts its power, whether cherished by a tenant farmer, or patronized by a peer. Its tendencies, outwards and upwards, are inevitable.

With respect to nice grades in the Shorthorn breeds—to the relative merits and advantages of Bates blood or of Booth blood,—there will always be differences of opinion. Some breeders will believe in distinct sorts or types of Shorthorns, because they are distinct, and others will patronize sorts or types that are good, because they are good. The latter class are the most likely to shape the future character of our cattle; to modify existing materials, and to create, by the readjustment of established combinations, new orders bearing new names. These in their turn will be the favorites of the day, pale, decline, and in their turn give way to fresh favorites. Periodical changes have affected, and will continue to affect Shorthorn breeding, and fashion in Shorthorns, as well as every thing else.

Respecting the points of a Shorthorn, the following is the standard of one who is everywhere acknowledged as a first-rate judge—Mr. Douglas of Athelstaneford. To Shorthorn fanciers who are familiar with the splendid animals imported by the Hon. David Christie, from Athelstaneford, it is almost unnecessary to say that the Douglas herd has attained a world-wide celebrity. Its proprietor thus enumerates

the "points:"—"An animal of apparently small scale, but in reality not so, having a great propensity to fatten; on short legs, with fine bone; massive compact body; wide chest; ribs well sprung; thick loins, and well filled up quarters; with deep twist; body all equally covered over with heavy flesh, and plenty of soft hair, and having no coarse beef on any part." This is a faithful description of the leading characteristics of the animals composing the herds once to be seen at Athelstaneford. When Mr. Douglas, however, gave that description, he stated he had in his mind's eye many of Mr. Booth of Warlaby's best animals. Warming with enthusiasm, he went on to say: "Look at the docile, even, intelligent expression of countenance; the waxy horn; moderately short neck; full neck-vein; prominent bosom; beautiful laid shoulder; capacious chest; ribs well sprung from the back; thick-fleshed, strong loins; deep flanks, huggins well covered; lengthy, well-packed hind quarters, with deep twist on straight legs; and fine bone. Such are nearly all the animals that constitute Mr. Booth's celebrated tribes, or families of Shorthorns."

We had something more to say, but the foregoing observations must suffice for the present.

KEEPING HORSES FEET AND LEGS IN ORDER.—If I were asked to account for my horses' legs and feet being in better order than those of my neighbour's, I should attribute it to the four following circumstances:—First, they are all shod with a few nails, so placed in the shoe as to permit the foot to expand every time they move; second, that they all live in boxes instead of stalls, and can move whenever they please; third, they spend two hours, daily, walking-exercise when they are not at work; and fourth, that I have not a headstall or track chain in my stall. These four circumstances comprehend the whole mystery of keeping horses' legs fine, and their feet in sound working condition up to old age.—*Miles*.

Canadian Natural History.

FALCONS.

(Falconidae.)

The Falconidae constitute the typical and most numerous family of Raptores, or Birds of Prey. In form and structure, these birds are very powerfully made.



GYR-FALCON.

Intended for rapine, they possess corresponding organs of great muscular strength, both to pursue their prey, and to tear it when secured. The wings are long and pointed, composed of narrow, strong feathers, and, when expanded, present an even surface of resistance to the air. The moving muscles are large and powerful; the tail is lengthened and rounded; the toes are long and slender; and the claws are curved and acute. The bill is short, and is much curved from the base to the tip. In the most rapacious species, it is furnished with a strong tooth, which may be as properly described a tearing instrument, as the powerful canine teeth of the carnivorous animals. The manner of flying is rapid and decided. The bird is seldom seen gliding or soaring on observation, and the prey is almost invariably struck down on the wing. A precipitous cliff is generally selected for the breeding place, and the prevailing colour of the eggs is reddish brown, with numerous irregular markings, of a darker shade. The birds of the genus *Falco* are usually denominated noble birds of prey, because, in proportion to their size, they are particularly courageous and powerful. The ignoble birds of prey, to which the Sparrow-Hawk, shortly to be noticed, belongs, are sometimes called "sailors." Their wings are shorter and thicker than in the former, and they prefer to fly with the wind, sailing along, with their wings extended and motionless. Their talons are straighter, shorter, and less powerful than those of the Falcon, and they strike with less force and precision. They prefer to hunt in thick woods, while the Falcons pursue their prey high in the air.

The White Gyr (*Falco Gyrfalco*, Linn.) figured in our first illustration, is the largest and most powerful of the genus. It is also known as the Greenland Falcon, and has been frequently confounded, by ornithologists, with the Grey or Iceland Falcon. Some years ago, however, at a meeting of the Natural History Section of the British Association, Mr. John Hancock,—the greatest living authority on the Falconidae—satisfactorily demonstrated that the species were entirely distinct. We cannot, within the limits of a short article, enumerate the various points of difference shown to exist between the birds, by the writer just named. Generally, however, we may state that while the Greenland Falcon has a white plumage, with dark markings, the Iceland bird possesses a dark plumage, with white markings.

The White Gyr is truly a northern and maritime species,—maritime probably from the abundance of food which is generally found around the rocky shores of its principal range, the breeding resort of numberless sea-fowl. It is a bold and daring bird, and delights to have its eyrie on some precipitous cliff overhanging the sea. According to Audubon, the nest is composed of sticks, sea-weeds, and mosses. It prefers birds to all other kinds of prey, and will not hesitate to attack the heron, or the stork. The Gyrfalcon's attack is graphically described by an English ornithologist as follows:—"When the Gyrfalcon comes within sight of her prey, she bounds upwards, every stroke of the wings producing a perpendicular leap, as if she were climbing those giant stairs which nature moulds the basaltic rocks, and when she has got the sky of her prey to a sufficient height for gaining the necessary impetus, her wings shiver for a moment—she works herself into proper command and poise, and to the full extent of her wings. Then, prone she dashes, with so much velocity that the impression of her path remains in the eye, in the same manner as that of the shooting meteor, or the flashing lightning. The stroke is as unerring as the motion is fleet. If it takes effect on the body, the bird is trussed and the hunt is over;



PEREGRINE.

but if a wing only is broken, the maimed bird is allowed to flutter to the earth, and another is marked out for the collision of death."

In falconry, this species was highly prized, and extraordinary prices were formerly paid for birds. Sir Walter Scott, and other delineators of the days of chivalry, have thrown a charming halo of romance round the lordly sport of falconry. Indeed, the practice of hawking is of very ancient date in Europe, and of yet more remote antiquity in Asia. Both Asia



SPARROW HAWK.

Minor and China possess many legends concerning it, while a passage in Pliny has been thought to have reference to the existence of the practice among the Thracians.

The Peregrine (*Falco peregrinus*, Linn.) shown in our next cut, is one of the boldest and most beautifully formed birds of its section. It is hardly so long, nor does it weigh so heavily as the bird just described; but the male Peregrine, when in high plumage and condition, embodies the very ideal of a bird formed, in all its proportions, for swift pursuit and rapine. It flies with surprising rapidity, and changes its course in the most astonishing manner. A favourite prey is the duck, which it seizes on the wing. Various attempts have been made to ascertain the velocity of this Falcon's flight, but accurate data can scarcely be procured. It has been variously rated at from fifty, to one hundred and fifty miles an hour. "At the greatest velocity of its rushes," says Sir William Jardine, "we have little doubt that it is beyond this speed; but in ordinary flight and migration, it may have perhaps been over-rated."

Audubon thinks that the Peregrine breeds in the United States; and Richardson affirms that it is common on the shores of Hudson's Bay and Arctic America. Niagara Falls is also mentioned as a popular resort of the bird.

The Peregrine varies in colour from greyish black to dark bluish grey—with indistinct dark brown bars. The quills are dark brown, with numerous transverse reddish white markings on the inner edge. The tail is greyish brown, marked with about twelve blackish bars. The length of the bird is about sixteen inches, and the extent of the wings about thirty. The females, as in birds of prey generally, are about one-sixth larger than the males.

The members of the sub-typical, or accipitrine section of the Falconidae, to which the Sparrow-

Hawk, (*Accipiter Nisus*) shown in our last illustration, belongs, have the form more slender, the wings more rounded, and short, and, when assisted by the ample tail, are better adapted for a gliding or fitting progress. The Sparrow-Hawk is of decidedly sylvan habits, wooded countries and extensive forests being its favourite haunts. A large sized tree is generally selected as the breeding place;—the nest is seldom placed on bare and precipitous rocks. The prey of the male Sparrow-Hawk consists principally of smaller birds, his weight not permitting him to carry off a heavy quarry. As in the Falcons, a marked disparity exists between the size and weight of the sexes. The female Sparrow-Hawk has been known to kill partridges and pigeons. Swallows and other swift-winged birds are accustomed to raise a hue and cry on the appearance of a Sparrow Hawk, and even attempt to drive him from their retreats. The general colour of the adult male is dark brown, upon the upper surface of the head, body, and wings, softening into grey as the bird increases in years. The female is coloured differently from her mate, the upper parts of the body and wings being hardly so rich a tint as in the male bird, and covered with numerous little white spots, caused by the white hue which is found on the base of each feather."

There are several other Falcons as well as Hawks found on this continent, but the three specimens we have described, may be regarded as fair types of the whole family.

THE APPETITE OF A FISH.—The labrum is a fish, mentioned by Pliny, and rather vaguely described as a kind of ravenous fish, seeing that every fish is by nature utterly and entirely ravenous. The elegant trout, who flies in the wildest terror if you show the tip of your nose, will eat nearly his own weight of bleak and dace on a hot, still June evening. A pike has been well known to rush at a fish well nigh the size of himself and even to dash at a male's nose. We have known a fishing frog lose its life in an insane attempt to swallow a wooden scoop, the proprietor of which objected to the proceeding. It is a short time since we read an account of a fish which had swallowed, among other matters, two broken bottles, a quart pot, a sheep's head, a triangular piece of earthenware, and a lobster, while in its liver the spine of a skate was comfortably embedded.

DON'T SHOOT THE OWLS.—In our days it was the custom to hunt through the forests for all sorts of game, whether on the wing or the leg. Many an innocent bird fell a victim to an almost utter ignorance of its habits and its haunts. Owls were always popped off without the slightest remorse. The fact that at rare intervals they would swoop down upon a plump chicken was enough. We hadn't read the Ettrick Shepherd's remonstrance.—Shooting a hoolet! I'd as soon shoot my barn cat. The fact is that as a general rule, the owl is not only one of the most useful, but one of the most harmless birds in creation. He destroys moles and squirrels and field mice and weasels, all of which do a vast deal of harm on every landed estate and about our homesteads. Now boys, when your gun is raised, think twice and don't you do it. Just bear in mind that Margery does a thousand times more good than harm. It is only the great horned owl that robs hen roosts, and eats up little turkeys and chickens anyhow, and he also eats rats and mice and insects.—*Mrs. Ploughman*

A BEAR ON FIRE.—The guardians of the Garden of Plants, Paris, were lately surprised by hearing extraordinary howlings proceed from the bear pit. On going to the spot they found that one of the bears was on fire, and, after vainly attempting to extinguish the flames by rolling the poor animal on the ground, they at last succeeded in plunging him into the large basin of water intended as a bath for him and his fellows. It appears that the bear's fur was set on fire by one of the new firework playthings, which a mischievous person had lighted and thrown into the pit.—*Galvani*

NOTE BY ED. C. F.—The bear in question must have been remarkably quiet and sagacious to suffer himself to be roughly rolled on the ground, and afterwards unceremoniously plunged into a cold bath! But "they manage these things better in France."

The Dairy.

Dairy Farming.

At a recent meeting of the Wilmot Farmers' Club, an interesting paper on this subject was read by Mr. Henry Brown of Haysville. After glancing at the history of dairy farming in Britain, the lecturer proceeded to trace its rapid development and popularity in the United States, and more recently in the Western districts of this Province. The gradual impoverishment of the soil by injudicious cropping was then discussed. The gradual extension of stock raising was adduced as a hopeful sign of the times. The suitability of Canada as a field for dairy pursuits was then shown. The lecturer proceeded:—

I know many believe it is more profitable to breed and fatten stock than to keep cows. To show that dairying is more profitable than stock farming I will make use of an argument which I found in THE CANADA FARMER [of March 1st, 1864], where it is stated that "it is doubtful if the amount of food which will produce, when fed to a good cow, 2 gall. of milk will secure a return of more than 4 cents, as used by farmers in raising young stock for the market. This is not mere conjecture; calculations have been most minutely made on this subject, and while some set down the return at only 3 cents, a few of the most sanguine stock-raisers put it at 5 cents. Now a gall of good milk will make a pound of cheese. Cheese commands 9 cents per lb. wholesale." Another authority, Sir John Sinclair, has stated that it is supposed that the same quantity of herbage that would add 224 lbs. to the weight of an ox would produce 900 gallons of milk. Now, if we reckon a pound of cheese the average weight from a gall of milk, we get 900 lbs of cheese, and if we would turn that into cash, even at the lowest computation of 6 cents per lb., it gives us at once \$54. If these statements are correct it is the interest of the farmer to adopt the dairy system in preference to the feeding of cattle. But even granting that the difference between beef and butter or cheese be not as great as here stated, yet it is generally admitted that there is a wide margin in favour of the products of the dairy.

I can give you the number of pounds of milk produced last year from a dairy of 10 cows, 6 of which were heifers (the first calf) the rest common cows. A friend of mine delivered at Mr. Harris's cheese factory, at Ingersoll, in 6 months, 31 883 lbs of milk, which would make 3,188 lbs. of cheese. The Sunday's milk was not included. Now the product of these cows for cheese alone would, at 8 cents per lb., be \$255 04; besides, there would be a considerable item to add to it for the value of butter made from the Sunday's milk.

The factory system of cheesemaking was then examined by the lecturer. Its advantages were stated as follows:—

It supplies a want much felt, in that it enables the farmer to become his own manufacturer. Hitherto he has been content to confine his efforts to the production of the raw material, disposing of his surplus to be manufactured and marketed by associated labour and capital. Those who now manufacture his staples secure to themselves a profit which, in most instances, exceeds that of growing the raw material. Now, if farmers would associate together and erect factories in different neighbourhoods, they can adopt a system by which they may secure to themselves the profits of manufacture. Fears may be felt lest the cheese-factory system should be overdone. But I think you will find it the opinion of men who are best able to judge, that it is almost impossible to overdo it. If this business is largely entered into in Canada, and their appears every prospect of it—European houses will, I think, appoint agents in Canada, and thus they will be able to buy direct from the producer, instead as under the present state of things, having to make their profit after already some three or four hands have made a good commission out of it; for you know, under the present system, the country buyer gets one commission, the house in Montreal another, and the shipper another, when it might just as well have gone direct from the producer to the European house. In adopting the dairy system of farming, there is one argument which cannot fail to recommend it to us. The Reciprocity Treaty is on the eve of expiring, and even should another be made, we cannot expect the same advantages we derived from the first. Uncle Sam seems to think that Canada must be dependent on him for the sale of her produce. Now, Canada wants to act as independently of the States as possible. Hitherto in the matter of selling our grain and cattle, we have in a measure been dependent on them for a market, and hence follows an argument in favour of dairy farming. We can sell the produce of our dairies without the help of our neighbours. We can—as well ship—and

with greater profit to the country and ourselves—to Europe from Canada as to let the Yankees do it for us from New York. Again, the demand for cheese is increasing in a ratio beyond that of the business of manufacturing, and as quality improves, foreign markets will gladly take all the surplus; while a large quantity is required for home consumption, and prices can be found which will render the business permanent and profitable.

You will perhaps think I have confined my remarks too exclusively to the manufacture of cheese, and that I might have said more of the profits derived from making butter. But the price of butter must be almost three times the price of cheese to make it as profitable, for where we can make 1 lb. of butter, we could make 3 lbs. of cheese.

I believe it is a great mistake to make butter when we can make cheese with greater profit and less labour. But if people won't be convinced of this, let them make butter, and our neighbours on the other side will not be slow to profit by the mistake, but will be glad enough to make all their own milk into cheese, and to buy their butter in Canada.

Ayrshire Cows.

At a recent meeting of the Massachusetts Board of Agriculture a resolution was introduced by the Secretary, for the purpose of obtaining the sanction of the Board to the opinion that the Ayrshires are best adapted to the wants of farms in the middle and eastern portions of the State. The resolution was not adopted by the Board, who no doubt are aware that the recommendation of any particular breed by a board, society, association, or any other body, has now very little weight in influencing public opinion, particularly when such endorsement is given in direct opposition to the judgment of practical men, who, it is presumed, are best qualified to decide such questions. The Ayrshires have a great name as dairy stock, and, no doubt, some of them give large quantities of good milk, but their excellence begins at the milk pail and ends there too. They do not make superior beef, nor do they grow to a large size; their oxen are not renowned as working cattle, and the breed does not take root and extend in places where it has been established and fostered with cost and care.

The most extensive dairy farmers in Europe and America, after many trials, have abandoned the idea of stocking their dairies with cows of any particular breed, as they find that strong, vigorous cows having all the points of good milkers are very rarely found among those breeds which have been for some time known as improved stock. Many attempts have been made to establish dairies of pure bred Devons or Durhams, but unless the owner was a man of large capital, who could afford to keep an expensive hobby, the purely bred by degrees gave way to grades, and sometimes to very common stock, whose valuable properties consist not in shape or colour, but in their capacity for yielding a large quantity of excellent milk, and a heavy carcass for the butcher when they are no longer of any use in the dairy. It is well known that the best milk cows in the celebrated dairies of Orange County, N. Y., are not purely bred Shorthorns, Devons or Ayrshires, but of a selection from all these breeds mixed up with natives, grades, and crosses of every kind and colour; the points of good milk cows being held in higher estimation than those of pure blood.—*Western Rural*.

BREEDING OF DAIRY COWS.—In the last Report of the New York State Agricultural Society, recently published, we find that Hon. Lewis F. Allen, who, by the way, is very high authority on these matters, having had a large experience and a wide observation, concludes that dairymen should raise their own cows, as the most economical and sure way to obtain a prime herd. He believes also, that if a heifer is well fed and well cared for, she will make a better cow if she comes in at two years old than at three.

Mr. Allen also favours in-and-in breeding, and says, "the thing has been too long and too persistently tried by the best breeders the world over knew, in domestic animals of every known variety, to need farther argument or elucidation, and the best and most popular cattle now in England or America, are the fruits of this practice." We have so great respect for Mr. Allen's judgment on this point that we will only say that it must be done with great caution, and only the skillful breeder should undertake it.

He also states "that our dairy herds, instead of yielding 350 lbs. or 400 lbs. of cheese, or but 150 to 180 pounds of butter to the cow, on the average, as they now do, can, by properly breeding and care of the cow, be increased twenty-five to fifty per cent., beyond these figures. We agree fully in the main idea, that it is better, on the whole, to breed one's own stock for the dairy.—*Rural N. Y.*"

Entomology.

The Pea Weevil.

A correspondent, "W. B. B.," writing from Smithville, C. W., requests us to furnish him with some information respecting the so-called "Pea Bug," and the best means of preventing its ravages. The term "bug," though popularly applied on this side of the Atlantic to insects of every kind and description, is only used by naturalists to denote those that belong to the order Hemiptera, the members of which are generally similar in appearance to the well-known but ill-favoured disturber of our slumbers. Those that belong to the other orders have their own proper English names, for instance, Beetles, Butterflies, Moths, Bees, &c. The insect before us is not a "bug," but a "beetle," belonging to the order Coleoptera, or Shelly-winged insects. It is distinguished from other families of beetles by the name of "Weevil," which includes all those hard-shelled insects whose head is prolonged into a long and slender snout, or broad muzzle, at the end of which the mouth and jaws are situated.

The "Pea Weevil" (*Bruchus pisi*, Linn.) is so fully described by Dr. Harris that we cannot do better than quote his remarks upon it, in a slightly abbreviated form. "In the spring of the year," he states, "we often find among seed-peas many that have holes in them; and, if the peas have not been exposed to the light and air, we see a little insect peeping out of each of these holes, and waiting apparently for an opportunity to come forth and make its escape. If we turn out the creature from its cell, we perceive it to be a small oval beetle, rather more than one-tenth of an inch long, of a rusty black colour, with a white spot on the hinder part of the thorax, four or five white dots behind the middle of



each wing-cover, and a white spot shaped like the letter T on the exposed extremity of the body." The accompanying cut shows the Weevil greatly enlarged, the stroke, at the side of the figure, indicating its natural size.

This insect belongs to a family of the great Weevil tribe called *Bruchidae*, the members of which feed on leguminous or pod-bearing plants, such as the pea, locust, lupine, mimosa, senna, etc. "During and immediately after the flowering season, they wound the skin of the tender pods of these plants, and lay their eggs singly in the wounds. Each of the little maggot-like grubs hatched therefrom, perforates the pod and enters a seed, the pulp of which serves for its food till fully grown."

"Few persons while indulging in the luxury of early green peas, are aware how many insects they unconsciously swallow. [The reader need not be alarmed; they are quite harmless when boiled.] When the pods are carefully examined, small discoloured spots may be seen within them, each one corresponding to a similar spot on the opposite pea. If this spot in the pea be opened, a minute whitish grub, destitute of feet, will be found therein. It is the Weevil in its larva form, which lives upon the marrow of the pea, and arrives at its full size by the time that the pea becomes dry. This larva or grub then bores a round hole from the hollow in the centre of the pea quite to the hull, but leaves the latter, and generally the germ of the future sprout, untouched. Hence these "buggy peas," as they are called by seedmen and gardeners, will frequently sprout and grow when planted. The grub is changed to a pupa within its hole in the pea in the autumn, and before the spring casts its skin again, becomes a beetle, and gnaws a hole through the thin hull in order to make its escape into the air, which frequently does not happen before the peas are planted for an early crop. After the pea-vines have flowered, and while the pods

are young and tender, the beetles gather upon them, and deposit their tiny eggs singly in the punctures which they make upon the surface of the pods. This is mostly done during the night, or in cloudy weather. The grubs, as soon as they are hatched, penetrate the pod and bury themselves in the opposite pea. Sometime every pod in a pea will be found to contain a Weevil-grub; and so great has been the injury to the crop in some parts of the country, that its cultivation has been given up. These insects diminish the weight of the peas in which they lodge nearly one-half; this occasions a great loss where they are raised for feeding stock, or for family use. Those who eat whole peas in the winter after they are raised, run the risk of eating the Weevils also; but if the peas are kept till they are a year old, the insects will entirely leave them."

With regard to the mode of checking the ravages of this destructive insect, we cannot think that our correspondent's recipe is of any use whatever. He states that he was informed that "Buckwheat, sown thin amongst peas, would prevent bugs." A few of the Weevils might possibly attack the buckwheat, but it is most probable that they would unanimously prefer their accustomed and most natural food. An exceedingly simple remedy, however, has been recommended, but, like almost all insect remedies, to be successful it should be generally adopted. It consists merely in keeping the seed-peas in tight vessels, over one year, before planting them. Another remedy is to put them into hot water for a minute or two just before planting; this will kill the weevils, and quicken the sprouting of the peas. There is a danger, however, in this mode, of killing the sprout as well as the weevil. As the insect is limited to a certain period for depositing its eggs, Dr. Harris states that "late-sown peas escape its attacks. Those sown in Pennsylvania as late as the 20th May, were entirely free from weevils; while in Rensselaer County, New York, peas sown on the 10th of June, six years in succession, never had an insect in them."

"The crow black-bird," Dr. Harris adds, "is said to devour great numbers of the beetles in the spring; and the Baltimore oriole splits open the green-pods for the sake of the grub contained in the peas, thereby contributing greatly to prevent the increase of these noxious insects. The instinct that enables this beautiful bird to detect the lurking grub, concealed as it is within the pod and hull of the pea, is worthy our highest admiration; and the goodness of Providence which has endowed it with this faculty, is still further shown in the economy of the insects also, which, through His prospective care, are not only limited in the season of their depredations, but are instinctively taught to spare the germs of the peas, thereby securing a succession of crops for our benefit and that of their own progeny."

Insects and the Cholera.

THE appearance of epidemic disease in Europe has turned the attention of the fearful among its inhabitants to the features presented by that Insect Life which always surrounds them, cholera or no cholera, but which, to their imaginations, are novel and concomitant with the disease now raging among them. We find the following in the columns of a late European newspaper:—

"The northern departments of France are at this moment suffering from a pest which to them is about as disastrous as an invasion of locusts in Southern latitudes. Vast and innumerable swarms of lepidopterous insects, belonging to the family of Noctuidæ, will settle down on a field of beets, and not leave it as long as there is still a fibre of the root left. Fire, acids, and every other powerful agent have been tried against them in vain; notwithstanding the most unremitting toil and care the insect multiplies to an alarming extent, so as to threaten the total destruction of beet, endive and cabbages, fortunately the only vegetables it chooses to attack."

These lepidoptera could only be destructive to the vegetation in their larval state, when their jaws or maxilla are adapted to the mastication of those plants which constitute their entire food. In this state they do not fly, but are crawling, worm-like bodies or caterpillars. In the "perfect" or "moth" state the maxilla are developed into spiral tongue-like processes, through which, as through a tube or sucker, they imbibe the various juices which constitute their sole nourishment. The amount of food taken by butterflies and moths in their perfect states bears no

proportion to the quantities which their larvæ or caterpillars consume.

But we shall be able to draw a timely lesson from the apprehensions of Europe at this time, if we discard from our minds the fear that the prevalence of insects is a prognostic of disease, so that, if the cholera does visit our shores, we need not add to our causes of apprehension should our noxious insects be tolerably plenty next year, as, indeed, they always are in a greater or less degree.

Fear is a great detriment to a healthful body, and brings its own punishment in the greater liability of those who entertain it to take the very disease which they frightenedly seek to avoid. Let us then not be alarmed at anything we may see in the multiplication of insects next year, and be confident that had we only looked in years past, we should have seen the same destruction, so that we can firmly await the dispensations of a kind Providence, undisturbed by auguries of evil, and with a calmness which has its origin in our own common sense and in a knowledge that "He does not willingly afflict or grieve the children of men."—*Entomologist*.

INFUSORIA.—The polishing slate of Bilin, in Prussia, forms a series of strata 14 feet thick, and is entirely composed of the siliceous shields of infusoria, of such extreme minuteness that a cubic inch of the stone contains 41,000 millions of distinct organisms.—*Mantell's Thoughts on Animalcules*.

Poultry Yard.

How to Raise Turkeys.

A farmer's wife writes the *American Agriculturist* as follows—"In the first place, select a good kind. The autumn or early in winter is the most favorable time for that—just before the birds are sent to market. Keep them well during the winter; make pets of them if you like. Mine eat from my hand, and answer to my call. In the spring, a few days before they begin to lay (which is about two weeks after moulting), put them in an enclosure, where it is most desirable to have their nests, and where they can not get out. After they have made their nests, they may be let at liberty, without any fear of roaming or straying. Next, take good care of the eggs. They should be gathered carefully every day and placed between layers of flannel or cotton, in a place of uniformly cool temperature, and turned over every day. In spring, after the turkeys begin to lay, it is often cold enough to freeze the ground, when, if the eggs are suffered to lie out, they will become chilled, and will not hatch. In warm weather, it is not so necessary to protect the eggs. As soon as the birds are hatched, feed them with warm bread and milk, well peppered, with boiled eggs added; or with lopped milk, thickened with cooked corn meal, canaille (wheat middlings) which is better. A little care in these matters will repay all efforts. Before I knew how to take care of the eggs, I had 30 eggs one year, and but one of them hatched. The next year I set 40 eggs, and nearly all of them hatched, and the birds lived. At present prices, raising poultry is a much more pleasant and easy occupation than the slavish drudgery of making butter and cheese. At least such is the opinion of a Cayuga Co. farmer's wife.

LOSS OF FEATHERS IN FOWLS.—It has been observed that all kinds of birds, kept in a state of confinement, are particularly subject to an extensive loss of feathers, rendering them naked and deplorable. This is altogether different from moulting, inasmuch as the fall of the feathers in the latter is occasioned by the new ones shooting out from the skin and pushing the old ones off, as is the case when young animals shed their teeth. In the disordered state in question, on the other hand, when the feathers fall, no new ones appear, or if they do, they seldom push far above the surface of the skin, but remain as mere stumps, arrested in their growth. It is a disorder apparently similar to that which in horses is termed out of "condition," when the hair becomes shaggy, rough, and staring, and is constantly coming off.

As the disorder termed "loss of feathers," is evidently a constitutional and not a local affection, it would be idle to seek for remedies in external applications, though stimulants might, perhaps, aid the operation of internal medicines. Amongst the latter, such as are known to act on the skin, particularly sulphur and antimony, may be tried. Good keep and cleanliness, plenty of fresh water, and an open range, will do more than any other treatment to restore the loss of feathers. Forge water, or water from the gas-works, might probably be of advantage, given as drink.—C. N. BEMENT, in *Country Gentleman*.

The Apiary.

"Miller Traps," "Comb Guides," and "Condensers."

To the Editor of THE CANADA FARMER:

SIR,—In THE CANADA FARMER for January 15th, I find an article, under the above caption, from the pen of J. H. Thomas, of Brooklyn. Believing that the introduction of the People's Bee-Hive to the public had something to do with the prompting of these enquiries, and having given considerable study to these "fixings," I beg a portion of your valuable space to reply to the article. Mr. T. sets out with the sweeping assertion that these and all other kindred "fixings" are worse than useless." We will lay this statement by the side of similar ones which we often hear in reference to moveable combs, &c., by those who have not tested their utility, and look further for proof. If the millers are so "unceremoniously ejected" by the bees upon their entrance into a hive, how is it that they manage to dispossess about ten per cent. of the bees in the country? The truth is, their superior agility enables them to leave their eggs in the strongest stocks. The larva, in my miller attachment, do not "find their way into the combs," but "feed upon the chippings of the comb that fall into the trap." Since they there find all the conditions necessary for their growth, with the additional favourable condition of being unmolested by the bees, it is "unphilosophical" that they should leave it for a place of danger. It is likewise contrary to my experience. How is that during last summer I did not find a single grub in the combs of my apiary; but being present on one occasion, when Mr. (L. C.) T. opened a Thomas hive, I assisted in extracting a number of grubs from the comb. I give my "trap" the credit, since there were plenty of millers present, as the worms I destroyed in the trap abundantly testified. The sum of Mr. T.'s argument is, that "not one bee-keeper in fifty, or a hundred," would pass around once a week or fortnight and destroy the worms. The objection is certainly very flimsy, and would apply with tenfold force to moveable frames, as the trouble of removing them, and the liability of being stung, render it, to the uninitiated, a formidable operation. It is not one-tenth part the trouble to destroy the worms in my hive that it is in others, with this very important difference:—In the Thomas and other hives, they are killed after they have spun their webs in, and feasted upon the combs, until dislodged by the bees, or bee-master; but in the People's Hive they have troubled neither bees nor combs. The statements in regard to the invention, disease, revival, &c., of the wire-cloth bottom are untrue; but as this does not affect the utility of the concern, I will not notice it further. Mr. T.'s quotation from Langstroth does not prove his statement immediately preceding it. The fact that Langstroth attacked a miller trap to his hive is proof that he believed that those who had sufficient interest in bee-keeping to purchase improved hives, and use the moveable frames, would use the miller trap also. Quinby says:—"Lay some pieces of refuse comb near the entrance to induce the miller to deposit her eggs there, instead of upon the combs inside."—*American Agriculturist*, August, 1860. Again, "put some pieces of comb under the swarms; the moth will be deceived, and lay her eggs there, when the worms are easily destroyed."—*American Agriculturist*, July, 1863. In opposition to this, we have Mr. T.'s assertion that miller traps are of no use "in cr attached to a hive." He prefers to have the worms hatch among the bees, that in case the bee-keeper neglects his duty, the bees will be "likely" to "destroy" them. My experience is that, having got them from the combs, the bees seldom pay further attention to them. The instinct of the bee teaches it not to use its sting on an enemy when there is a prospect of disposing of it without; and since, according to Quinby, the grub "has a skin which the bee cannot pierce with its sting," we have Thomas versus Quinby again. Sometimes the bees carry them out, but generally allow them to "wind up" in the cor-

ners of the hive, under the edges or in some convenient place outside. Says Quinby:—"He gormandized upon the combs until satisfied before he left them, and is glad to get away from the bees anyhow. A place for a cocoon is easily found" (p. 170), "and a moth perfected ten feet from a hive is just as able to deposit 500 eggs in your hive, as if she had never left it" (p. 166.)

In regard to comb guides, Mr. T. makes a number of assertions, spices it with a little ridicule, and serves that up to your readers, in lieu of argument. He says:—"In a hive properly constructed, the combs will be built straight without the guides." If this is true, without exception, a properly constructed hive is a thing of the future. Four authors, in my possession, bear me out in the assertion. I do not except even the Thomas hive, with the celebrated wedge-shaped top piece, he "talks about" so much, and threatens with prosecution those who use it without his license, though it was in use before he even conceived the idea of getting up a hive. I am prepared to furnish the proof to these statements, when called upon to do so. As Kidder uses a guide, I will not quote him; as interested testimony, *pro* or *con*, cannot be relied upon. The agents of the Shaker Society, near Albany, state that one of the "decided advantages" which the Kidder hive secures, is "the ability to force the bees to build straight combs—all worker comb, which, in the opinion of some apiarians, is worth more every year, per swarm, than the cost of the hive." A bee-keeper at the London Fair had used the Kidder guide, and considered it a valuable acquisition, but regarded mine as superior to it.

Mr. T.'s description of a Condenser does not answer to mine very well, and as to its "creating a dampness," I "can't see it." My object was to dispose of dampness by condensing it, and carrying it from the hive. This it does. I have, after a cold snap, by collecting it, secured a gill or more of water. But since a condenser is so "unphilosophical and unsound," we would expect Mr. T. to ring its death knell. He says:—"Would we not think that person was not *compos mentis* who, instead of ventilating his sleeping apartment, should provide it with a condenser? Certainly. What then? I should likewise regard that person as *non compos mentis*, who, for this reason, should reject a condenser in a bee-hive. In a hive the exhaling mass occupies about a sixth of the space, the condensed exhalations often shutting them from their stores, causing the starvation of the colony, or melting and dripping upon them, they are chilled to death. Will Mr. T. please trace the analogy in the case of the occupant of a sleeping apartment. In conclusion, Mr. Editor, should I in the course of my experiments find that any of my "improvements in bee-hives" are "unphilosophical" and disapproved by "leading apiarians," I will not only imitate Mr. T. in discarding it myself, but will also cease to represent it as such to others. A. N. HENRY.

Oshawa, Feb. 9th, 1866.

Honey Bees.

As an instance of the sagacity possessed by honey bees, which amounts to bringing into action reasoning faculties, occurred in our apiary, some fifteen years ago, as follows:

A family of bees were dispossessed by the bee-moth, and we were not aware of it till the hive became full of moth worms and moth-millers. When we discovered the condition of the hive, we found that the bees of the adjoining hive, about a foot from the infested one, had built a wall of propolis—the gluey substance with which they stop up holes and cracks—along the entire side of their hive, which faced the one filled with the moths, about half an inch high and half an inch wide. This wall was built upon the bottom board of the hive, in order to close up the opening, the hive being raised about half an inch all round, resting on blocks at the corners.

It appeared that the bees were sensible of the danger to which they were subjected, and concluded to stop up the open space on the side of the most danger. When we discovered this wall, about 500 bees were at work upon it, it then being nearly finished. We left the invested hive on its stand two days, in order to watch the labours of the bees at the wall, and when we removed the mothly hive, the bees at work on the propolis wall, stopped their labours immediately.

Now, the question is, how did these bees know that such a wall would be a defence, and how did they communicate the object they had in view to each other, so as to produce a concert of action? It must have taken 500 to 1,000 bees 10 or 12 days to do what they did, and the mystery is, by what means, or knowledge, were they led to commence so great a task? It would seem that it was done by nothing short of human foresight and wisdom.—*Rural American*.



Grain Producers versus Grain Dealers.

To the Editor of THE CANADA FARMER.

SIR, In this age of progress and improvements, when people are laughed at, if they cannot keep up with the times, men write up inventions of all kinds, and insist on us farmers trying them. The best kinds of ploughs, drays, seed, seed-drills, reapers and mowers, the best kinds of stock, and the best way to manage them, the best time to market, are all topics more or less ably discussed. All this is very good, but there is one subject that has had not the attention paid to it that it ought to have. Some measures are necessary to protect us from the avarice of the buyers, especially the grain dealers. When we have toiled hard and battled with wind and weather, and after trying to do our best to raise a good crop and keep up with the times, and have been at a good deal of expense for implements, and at no little pains to bring our grain to market in a fair condition, so as to expect the market price, we are often grievously disappointed. In the small towns and villages, we are entirely at the mercy of a set of hungry, avaricious, commission agents. These wretches usually lay their heads together each morning, and fix the market price for the day. The rate would appear to be regulated by the quantity expected; but if they discover that they have over-estimated the amount, and that grain is arriving somewhat tardily, they put a few cents more on the bushel, when there is no actual rise in the market, well knowing that we will soon hear of it, and snap at the bait. But, like the skilful angler, they are ready to pull whenever they see us nibble, and then when they have a good haul in, down comes the price below the real value, and when there has been no actual fall in the Grain market. This, Sir, is no fancy sketch, but what actually takes place frequently in all our petty town and village markets. The buyers know we cannot help ourselves. When we have brought in a load—many of us a distance of fifteen to twenty miles—we are in a measure compelled to take whatever they offer, because of the lost time, trouble, and expense of drawing it home again—although all the time well aware we have been cheated out of perhaps six or eight dollars. Now, in this way we are unfairly dealt with. I don't think the abrogation of the Reciprocity Treaty will be our ruin. I am of opinion Canada would be a gainer, and at the same time more independent, by trading more with other nations, than in being so much restricted to one market. But there is one thing I am afraid of—had as we are at present—once the Yankee is shut out of our market, we will be more than ever left to the tender mercies of our commission agents. When they have a less opposition, we may expect them to shave closer still. Do not think I am one of those who would deny a fair profit to all. My motto is fair play—live and let live. All I contend for, is, that we are entitled *any and every day* to the fair market price for our produce. Now, Sir, could not you or some of your long-headed correspondents who write long yarns for THE CANADA FARMER, put us on some co-operative plan whereby we would be able to get justice in this matter? Could not farmers, as well as others, devise some plan, such, for instance, as by joining together and loosening the purse-strings a little, to build a storehouse of our own in the small towns and villages, (in the city, of course competition defies combination,) where we could at any time store our grain if the market price did not suit, until our masters, the grain dealers, came to their senses again? Possibly such a combination might eventually lead to the appointment of an agent of our own in the shipping ports for the transaction of our own business. I do not intend in the meantime to attempt laying down a plan, hoping that some one more qualified will take the subject in hand.

I consider the Farmer the mainstay, yea, the very backbone of Canada. Any man, although he has but one eye, and that but half open, can soon perceive by the lengthened visage and fallen lip of the country storekeeper, that when it is bad times with the farmer, they are the most to feel it. Hoping that you will give this a place in our CANADA FARMER—I say our, for I have a share in it, and have always done what I could to extend its circulation, and would like to see it in the hands of every tiller of the soil in Canada, because it has done much good already, and I expect it will yet accomplish much more.

Yours, &c.,

A. PLAIN FARMER.

East Nisouri, Feb. 28, 1866.

Gravel Houses.

To the Editor of THE CANADA FARMER:

SIR.—In your issue of Feb. 15th, a correspondent desires some information concerning gravel houses, so I comply, and send you what little experience I have had with them. At the present I am residing in a gravel house, and it is warm and dry, and, if anything, superior to stone or brick. I have assisted to rear two or three buildings of gravel, and have seen several in course of construction. They are built by means of boxes, made of planks 2 inches thick, by 14 inches in width, and 12 or 15 feet long. You place the planks on the foundation, about 9 or 9½ inches apart, securing the ends firmly, by means of a link and two staples, and then fill in the gravel. In the commencement of the building, two courses can be put up in succession, which, after remaining two days, or more, (if the weather is fine and dry two days will do, but if not the planks will have to stay on until the wall is sufficiently dried to allow of their removal,) the lower course of planks may be taken off, and may be put on the top of the upper. Pieces of board about 2½ inches wide will have to be laid across the top of the upper course, for the planks to rest on when put up. Holes of about three-quarters of an inch in diameter, require to be bored in the ends of the cross pieces, and pins inserted in such a manner that the pin will secure the lower edge of the upper plank, and the upper edge of the lower, which keeps the planks from spreading with the weight of the gravel in them. And so keep raising the lower course of boxes, and placing them on the upper, until the wall is as high as required. The roof of such buildings should project at least 2½ or 3 feet. In mixing your materials, a little care is required. The lime requires to be good, and the gravel sharp. About one bushel of lime to twelve of gravel is the proportion, but if the gravel is not good, a greater quantity of lime is required. One to nine or ten would not be too much. But a person wishing to build of such materials, would do well to secure a man that has had some experience in building those sort of houses, as all depends upon the wall being constructed properly, and the materials being mixed in a proper manner. Messrs. Carson & Kenroy, of Oakville, are the most competent persons I know of, as one is a first-class carpenter and joiner, and the other understands building gravel walls perfectly, and they perform their work well, and on very reasonable terms. Persons wishing to build, I would advise to communicate with them, and if the contract to build, it will be done in a proper and workmanlike manner.

Pine Tost, March 1, 1866.

PRICE OF DRAIN TILES.—“C. Sibbald,” of Brockville, writes as follows:—“Will you ask for information in your next issue, from Drain Tile Manufacturers regarding the prices of different sizes of tile, delivered on board of vessel, or by car load on railway, at place where manufactured.”

SCHOOL HOUSE PLAN WANTED.—“Merrimac” writes as follows:

“Can you in some early number of your valuable paper, give your readers an engraving of a country School-house, to be built of brick, and capable of comfortably seating, say, sixty scholars. The building to be completed for five hundred dollars or less. You will please make calculations for proper ventilation, &c. We would like as tasteful a building as could be erected for the above sum. By giving us a plan as above you will confer a favour on your humble servant, and on hundreds of the rising generation.”

ANS.—We will endeavour before long to comply with our correspondent's request.

COST OF WIRE FENCING.—“B. Guening,” of Hamilton, writes as follows:—“I have had considerable experience in England in the erection of strained wire fencing, also in manufacturing what was termed patent wire fencing, and I am now engaged in making machinery for manufacturing it in this country, and as soon as complete I propose to introduce it to

your notice, as I think 't well adapted to the agricultural requirements of this country. One of its advantages, among many others, is mentioned by your correspondent, 'total immunity from snow drifts.' Its durability also will be very great in this country when covered with asphaltum, which every roll will be before sending out), and the entire cost will not much exceed, if any, that of a board fence. With respect to the cost of strained wire fencing, it will be seen to depend on many conditions, such as strength of wire, the kind and quantity of supports, the length and strength of the fence, the number of wires, &c. These requirements are all best arranged by contract, but I may state that about 25c. per yard would make a good fence, if not under 500 yards long; but this does not apply in the same way to the patent fence, as it is sold in rolls, and will only cost about the same per yard.”

How to Fix Ammonia.—“Joseph Jackson,” of Rosebank, Guelph, writes:—“Having read your ‘Talks about Agricultural Principles,’ I would be obliged to you to know what will be the best thing to use upon a dung-heap and in stables to keep the ammonia, which, you say, should be kept for future service. We have been using plaster of Paris, which, when dusted over the stables, seems to take away the smell, but I do not know whether it is the right article or not for retaining the ammonia.”

ANS.—You are adopting a very good plan. The plaster converts the ammoniacal vapour into what is called sulphate of ammonia. This is not volatile at a common temperature—that is, it does not escape in the form of vapour—and thus the ammonia is husbanded for future use. By such a course as you are pursuing, a three-fold advantage is secured. 1st. An unpleasant smell is prevented. 2nd. Gases injurious to health are deprived of their power to do injury. 3rd. A most valuable manure is obtained for application to the farm or garden. There are some other methods that may be adopted, but you are employing one of the best, and as plaster is cheap and easily obtained in your locality, we advise you to persevere in your present practice.

The Canada Farmer.

TORONTO, UPPER CANADA, MARCH 15, 1866.

A Connecticut Stock Farm.

ON our return from the New England Agricultural Fair, in September last, we took a short detour from Worcester, Mass., into the adjacent State of Connecticut, for the purpose of making a flying visit to an old acquaintance of ours, Mr. John Giles, who owns and works a farm of 175 acres in the town of South Woodstock, Windham County. Patnam Station, on the Norwich and Worcester R. R., is the railroad point nearest to our friend's residence, and a carriage ride of two and a half miles through charming scenery, brought us to the very place. It was worth taking a far longer journey to behold the beauties of a neighbourhood which is the favourite summer resort of that child of nature and true lover of the beautiful, Henry Ward Beecher. His glowing descriptions of the locality, and of his delightful rambles here-about, are they not written in those world-renowned rural chronicles, the “Star Papers?”

Mr. Giles farms for pure love of country life, and as his mode of farming is rather peculiar, we “made a note of it,” intending sometime or other to give our readers the benefit of his example and experience. This intention we now proceed to fulfil. Our friend's farm lies on a strip of rich land, varying from a quarter of a mile to a mile in width, and extending some fifteen miles in length. The surrounding land is, for the most part, a deep, gravelly loam, of very inferior quality, and the whole region is found to be best adapted for grazing purposes. Windham County is noted for its excellent butter and cheese. Mr. Giles came into possession in 1853. The farm had been sadly neglected, and was in poor condition, a large portion of it being over-run with alders and bushes of various kinds. The previous proprietor was a Millerite, and appeared to have been one of

the few who acted consistently with his theory, for he deemed it useless to make much provision for an earthly future, since the world was very soon to come to an end. Consequently, he let things go to rack and ruin. For two years, the few crops he put in were not harvested, and a most desolate air pervaded the whole place. Mr. Giles vigorously set about a process of renovation. He put on two stout pair of oxen and a stiff plough, tore up the alder and other bushes,—grubbed out by hand what the plough failed to uproot,—gathered them all in Leaps and burnt them. Part of the farm was already seeded down, but yielded only from half a ton to a ton of hay per acre. Mr. Giles did not break up the sward land, having espoused the belief that by suitable top-dressing, exhausted meadows can be restored to their original fertility, and made even more productive than ever. It is a striking confirmation of this theory, that the same ground now yields from two to three tons per acre of cured hay, and that a plot of thirty-six acres, which at one time was insufficient to keep four cows, winter an autumn, now amply feeds fifteen. Mr. Giles began the work of renovating the exhausted meadows by applying three hundred weight of guano per acre. He purchased stock, which he fed with the produce of his farm, so accumulating large supplies of dung, which he composted, and applied as top-dressing, when thoroughly rotted. This plan has been steadily pursued for thirteen years, and with complete success. The portion of the farm that was under grass at the beginning of that period, has not been disturbed, and the rest of the land has been gradually seeded down with the exception of eight or ten acres, kept under cultivation to furnish a little grain and family supplies. The grasses that are sown, are red-top, clover, and timothy. The fields are alternately mowed and pastured. Mr. Giles contends that it is quite unnecessary to break up sward land every four years, and argues that the reason why meadows fail is that farmers neglect to manure them. They cut successive hay-crops and withhold the needed supplies of dung. Is it any wonder they get small returns? Let them give grass lands liberal top-dressings, and they will continue to yield heavy crops of hay year after year.

As an instance of what may be done in subduing neglected spots on a farm, we may mention that a low-lying patch of about 10 acres, overgrown with alders, huckleberries, and shrubs of all sorts, a complete shelter for partridges and rabbits,—was broken up and reduced to cultivation. The first year it yielded well, but Mr. Giles being absent in Europe, purchasing choice stock, no very accurate account was kept of the actual proceeds. The second season it was cropped with wheat, oats, barley, turnips, potatoes, 2,000 head of cabbage, &c., and yielded a net profit of \$600, after allowing for labour, and interest on the land at \$100 per acre.

Mr. Giles cultivates his land as a stock and dairy farm, and believes that he can turn it to more profitable account in this way than in any other. He could cut from 250 to 300 tons of hay annually, which would sell at an average of \$15 per ton. He usually keeps about 50 head of cattle, 4 horses, a few pigs, and a large stock of poultry. He has long been known as a breeder of improved stock, and in reference to poultry of all kinds, is regarded by American fowl-fanciers as a sort of oracle. He formerly kept Shorthorn and Ayrshire cattle, but latterly has pretty much confined himself to Jerseys or Alderneys, which he considers the breed for dairy purposes. A cow of this breed will not give a large yield of milk in quantity, but the quality is very rich, four quarts having been known to make a pound of butter. Mr. Giles's milking-herd consists of picked cows, and they will average from 14 to 16 pounds of butter each per week, in the height of the milking season. The butter is of superior quality, and brings the highest price in the market. Jersey cows are hardy, easily kept, and very docile. They have fine limbs

taper neck; small head, and white muzzle, giving them a deer-like appearance, and their veins are very distinct and prominent, sticking out like those of blood horses. Mr Giles has, unquestionably, the best herd of his favourite breed of cattle on this continent. What young stock he has to sell is easily disposed of there being great demand on the other side for this breed. He sells calves newly dropped at \$50 each, when six months old at \$100, and full grown cows at from \$250 to \$300. At an auction sale of surplus animals from his herd, held about a month after our visit, and reported in THE CANADA FARMER of Nov 15, 1865, cows brought from \$225 to \$350; a yearling heifer \$160, and several grades from \$75 to \$150. Alderneys are very precocious, and may be counted on to come in at 18 months old. Mr. Giles has had them come in at 13 months old, and one heifer that calved at 11 months old, gave for some time seven pounds of butter per week. Mr. Giles does his mowing with the Buckeye machine, which he considers the best single mower. He makes his hay with the tedder and horse-rake, and with these implements can do as much work with the help of three men, as he could formerly with twelve. Of the tedder he speaks in the highest terms. This machine, as made in England, was figured and described in our last issue. There is a style of hay-tedder made in the United States which comes cheaper than one imported from Britain would do. The hay made with it, and stored in Mr. Giles's barn, was very green, sweet, and juicy, and was evidently dried without needless waste of the natural juices of the plant.

Did space permit, we might dilate on several other matters, but this article is long enough, and must draw to a close. The ornamental tree planting about the house, gives at once a retired and tasteful air to the dwelling. There are ten acres in orchard. The barns are spacious and well arranged. The manure is stored and rotted under cover, in a manure cellar. A stream flowing through the farm is expanded into a large pond, at the rear of the house, which is stocked with fish, and frequented by flocks of ducks and geese. No one can visit such a place without feeling that a country home may be made a most attractive and delightful scene far out-shining in real charms, the grandest city palace.

The Cost of a Stink.

MANY farmers have an affectionate liking for a stink. They imagine that a pungent stench given off by a dung heap, is a sure sign of goodness and strength in the manure, and in fact they estimate its value very much by the sense of smell. "Ike Marvel" hits off this idea very well in his well-written book, "My Farm of Edgewood," where he makes "Nathan," one of his characters, deliver himself of the following opinions, in conversation with a scientific gentleman. "Guess its all right; smells pooty good, doan't it? Yes, but don't you lose something in the smell?" "Wall, d'n know;—kinder hard to bottle much of a smell, aint it?" "But why don't you compost it, pack up your long manure with turf and muck, so that they will absorb the ammonia?" "The what?" "Ammonia; precisely what makes guano act so quickly." "Ammony, is it? Wall,—guanner has a pooty good smell tew; my opinion is that manure ought to have a pooty strong smell, or 'taint good for wuthin'!"

The stench arising from manure is occasioned by the escape either of carbonate of ammonia, or sulphuretted hydrogen,—or both. These gases are valuable for their fertilizing properties, and they are at the same time injurious and poisonous to animal health and life, especially the sulphuretted hydrogen. It not only emits a very disagreeable odour, but is most pernicious to human health. It has even been known to cause death.

Who shall estimate the cost to a farmer of the stink which at once wastes valuable manure, and injures

the health of the cattle and human beings that are forced to inhale it? It would perhaps be practicable to make an approximate estimate of the money value of the ammonia that escapes. An ounce of carbonate of ammonia may be bought of a druggist for a few cents. Placed on a plate before a fire, it will, if pure, evaporate in ten or fifteen minutes. This may give some distant notion of what is being lost, hour after hour, as the sun lets down his rays on the manure heap, stables and sheds, in the warm weather of spring and summer. Even in winter the loss is very great. An English writer referring to this matter, observes. "If a farmer will take one half of the food, the loss of his cattle, the amount of his farrier's bill, and to these add the cost of 'medicine and attendance,' rendered necessary by the sickness of himself, his wife, and his family, and divide the gross amount by two, after adding about 25 per cent. for loss of time and labour, he will arrive at something like the cost of this waste."

There is no excuse for this extravagance, because it is so easily prevented. The free use of gypsum, muck, and other absorbents, about stabling and manure-heaps, will prevent waste, and conserve health. In view of a probable visitation of cholera the coming season, the cost of a stink may be terrible. Not only in towns and cities, where large numbers of persons are collected, but even in country places and on every farm, this nuisance ought to be abated, and every possible precaution taken for the maintenance of the public health.

SIMMERS' CULTIVATOR'S GUIDE.—Our readers will perceive by an advertisement in another place, that the "Eleventh Annual Edition" of this valuable descriptive catalogue has been issued. It contains very complete lists of the most approved varieties of garden, field, and flower seeds, with full directions for raising vegetables, farm roots, and flower seeds; together with a great variety of useful information respecting horticulture in general. There are also a number of well executed illustrations of choice flowers, dispersed throughout the book. Altogether it is a highly creditable production, and cannot fail to prove a useful adjunct to amateur as well as to professional cultivators. As usual, Mr. Simmers will forward his catalogue gratis to customers, who have left their address with him. He is also prepared to furnish all correspondents with a copy who remit two cents to pre-pay postage. Mr. Simmers well deserves the extensive patronage which he already enjoys, and we cordially recommend intending purchasers to pay his establishment a visit.

Agricultural Intelligence.

Ready Markets and Good Prices.

"Accounts from Ireland tell of an estimated deficiency in the home supply of flax for the spindles of the Ulster flax mills. In England and Scotland there is always far more raw material used in the factories than there is grown in the fields. The intelligence from Ireland, therefore, goes to show that there will be an increased demand in the United Kingdom for flax grown abroad, and should afford encouragement to the Canadian farmer to extend this branch of cultivation. Canadian flax has already made a reputation among British spinners, and there need be little doubt that the highest prices would be realized for all that could be grown the coming season in Canada on its shipment to Belfast or Liverpool."

We find the above paragraph going the rounds of the press, and we copy it to endorse its recommendation that, during next season, our farmers should enter more largely into the growth of flax than they have ever done before. We believe the above statement about the shortness of the last crop in Ireland to be quite correct, and we do not doubt that Canadian flax might be profitably sent to Great Britain for sale. But it is quite unnecessary to go so far from home for a market. The large flax establishments now in operation in several parts of Canada, will buy all the flax that our farmers can raise—in fact, we believe the demand, during the past season, has far exceeded the supply. We know of some of our flax manufacturers having had to go to the United States

to make purchases of flax seed, and that others have not obtained as much flax as they required. The United States is also a market for our flax; and would more than buy all our crop. Let our farmers, then, increase their breadth of land devoted to flax culture. They have a market at their own doors for all they can grow, and they can procure prices which render it one of the best paying crops. Having ready markets and good prices, what more could be desired?—*Trade Review.*

NEW SCOTCH COLONY.—The *Fredericksburg Herald* states that a "Scotch gentleman, Mr. Black, has taken on lease for ten years a fine estate in Caroline county, Virginia, and intends to return to Scotland and bring over a colony of emigrants, including the sons of large farmers, who will have something wherewith to purchase and improve."

VERMONT RURAL ITEMS.—(Prepared for the *Rural New Yorker* by a Vermont boy.)—F. L. Upham, of Wethersfield, recently sold an American Merino ram for \$1,000 to a Texan flock-master. Geo. Campbell, of Westminster, has sold fifteen rams to go to Australia. M. K. Griffith, of Tunbridge, raised the past season on 24 square feet of ground, onions at the rate of 1,815 bushels per acre. The Enosburg Centre Cheese Factory made 200,000 pounds of cheese last season—2,100 in number—from 2,100,000 pounds of milk. A bull raised and owned by W. R. Dean, of Factory Point, weighs 4,240 lbs. It is said to be the largest bull in the State, if not in New England. David Jack, of Marshfield, caught 27 minks the last fall, which he sold for nine dollars each. David Haskell, of Peacham, lately killed a pig 9 months old whose dressed weight was 412 pounds.

NOTE BY ED. C. F.—Canadian boys will oblige by preparing items like the above.

DOGS IN IOWA.—The Secretary of the Iowa State Agricultural Society, has recently issued an elaborate review of the condition of agriculture throughout the State of Iowa, for the year 1865. We make the following extract touching the dog nuisance:—"An instructive lesson may be learned from the fact, that there were returned in 1864, 86,000 dogs; and since no general epidemic has prevailed among them, it is safe to conclude that the number at present, greatly exceeds the return. The value of sheep destroyed by wolves and dogs the same year, is \$126,148, and since sheep have increased, and there is no evidence of failure of the canine appetite for mutton, it is not extravagant to imagine that the value of sheep damaged in 1865 has by no means been lessened. A tax of one dollar per head on dogs, would raise a revenue sufficient to pay all the annual appropriations to agricultural societies, and in a very few years, would build an agricultural college, endow it with professorships, stock an experimental farm, purchase a chemical laboratory, found a museum of natural history, and prepare the way for the education of hundreds of youth."

Poetry.

Waiting for the Spring.

As breezes stir the morning,
A silence reigns in air,
Steel blue the heavens above me,
Motionless the trees and bare;
Yet unto me the silliness
This burden seems to bring,—
"Patience! the earth is waiting,
Waiting for the spring."

Strong ash and sturdy chestnut,
Rough oak and poplar high,
Stretch out their sapless branches
Against the wintry sky.
Even the gullies aspen
Hath ceased her quivering,
As though she too were waiting,
Waiting for the spring.

I strain mine eyes to listen,
If haply where I stand,
But one stray note of music
May sound in all the land.
"Why art thou mute, O blackbird?
O thrush why dost not sing?"
Ah, surely they are waiting,
Waiting for the spring.

O heart! thy days are darksome;
O heart! thy nights are drear;
But soon shall streams of sunshine
Proclaim the turning year.
Soon shall the trees be leafy,
Soon every bird shall sing;
Like them be silent, waiting,
Waiting for the spring.

—*Mark Lane Express.*

British Cleanings.

We learn from a British exchange that "the death of Peter Joseph Lenne, one of the most distinguished horticulturists of Germany, and the founder of the modern German School of Landscape Gardening, is just announced. He was born in 1789."

DISEASE AMONG BEES.—The *Farmer* (Scottish) contains the following: "A contagion has broken out in the beehives of certain districts in France. A distinct sort of infusoria fastens on the honey-worker, and multiplies on his body with such rapidity that death ensues in a few hours. It has been ascertained that the germs of these animalculæ are found on certain shrubs, particularly on the *helianthus amarus*, which it is of vital consequence to extirpate from the vicinity of bee-hives."

A HORSE OF PRINCIPLE.—Mr. Smiles, in his *Lives of the Engineers*, relates the following: "It is a remarkable circumstance, that nearly the whole material employed in the building of Waterloo Bridge was drawn by one horse, called 'Old Jack,' a most sensible animal, and a great favourite. His driver was, generally speaking, a steady and trustworthy man, though rather too fond of his dram before breakfast. As the railway along which the stone was drawn passed in front of the public-house door, the horse and truck were usually pulled up while Tom entered for his 'morning.' On one occasion, the driver stayed so long that 'Old Jack,' becoming impatient, poked his head into the open door, and taking his master's coat collar between his teeth, though in a gentle sort of manner, pulled him out from the midst of his companions, and thus forced him to resume the day's work."

FEMALE PEDESTRIANISM.—A lady writes to the editor of the *London Field* as follows: "Two or three years ago I wrote to you praising Mr. Dowie's boots. I should like to tell your readers that I have had another tramp in a pair of them over the Mont Blanc range of Alps to Courmayeur N.E. to the foot of Monte Rosa, over awful stones, and some tolerable passes—the Col de Turlo for one—down into Italy; and, after some railroad, up through Auvergne—in all a little under 600 miles of sheer walking; and I can say, like the Israelites, that my boots waxed not old, neither did my feet swell. And if my fellow-countrywomen would but be persuaded to have their boots made the size and shape of their feet there would not be so many who 'positively could not walk more than half a mile;' nor so many to say in astonishment, as we tell our adventures and make them envious. 'My dear I wonder it did not kill you; I'm sure it would me!' I am of opinion, from experience, that more life than death accrues from the free use of our limbs."

MEDICINAL PROPERTIES OF THE BLACKBERRY.—"Firefly" writes to the *London Field*, as follows:—"Physicians in former days used to recommend an infusion of blackberry leaves as a remedy for hæmorrhage of the lungs; and I know it is an excellent gargle in cases of relaxed or ulcerated sore throat, and can therefore the better understand its being of service in some kinds of heartburn, for it possesses healing virtues. Many astringents are productive of heartburn—port wine, for instance, will cause it with some people. The juice of the blackberry leaf is used in village practice for the removal of tetter; the leaves are bruised, and steeped in white wine, and applied in the form of a poultice. But to turn to more agreeable recollections of the blackberry, how cooling and grateful the ripe fruit is, or rather was—for I am thinking of the days when bumble-kites, as they are called in the north, were a favourite dessert of mine:

And thou, wild bramble, back dost bring,
In all their beauteous power,
The fresh green days of life's fair spring,
And girlhood's joyous hour.

as some one (I forget who now) writes."

WINNING AND BEAUTIFUL SOUTHDOWNS.—The *Mark Lane Express* says:—"The sheep which attracted most attention at Smithfield were Southdowns. The first prize in the class, with the silver cup for the best Down sheep, was carried off by Lord Sondes. The Elmham flock has only once been exhibited before our Norfolk, saving at foreign shows, yet the present success proves what a high character pertains to sheep bred from Henry Overman's and Jonas Webb's stock. Splendid sheep these are, with a greater size and

weight and far better backs than Lord Walsingham's, and weighing on an average only 209 lbs. per sheep. This lot we take to be the gem of the show, and while your eye and hand approve their form and mutton, if you are a judge, you are sure to admire them even if you are not. Critic or not, you cannot withhold admiration from the even character of the beauties in this pen—the exact similarity of each animal to his fellow in form, style, color expression of countenance! This alone is a rare merit, irrespective of the excellence of the individual sheep; as the feeder experiences more difficulty in securing a level set of wethers than a fowl fancier does in matching pullets for a show

HOW TO KNOW GOOD FROM BAD MEAT.—The *North British Agriculturist* has the following:—"In the present state of the meat market, reliable information regarding the characters by which good and wholesome meat may be known, is valuable. Such information is very fully given in Dr. Letheby's Report on the Cattle Plague. Good meat, says Dr. Letheby, is neither of a pale pinkish colour, nor of a deep purple tint. The former is indicative of disease, and the latter shows that the animal has died from natural causes. Good meat has also a marbled appearance, from the ramifications of the little veins which surround the fat-cells; its fat, especially that of the internal organs, is hard and suety, and is never wet, whilst that of diseased meat is soft and watery, often like jelly or sodden parchment. Again, the touch or feel of healthy meat is firm and elastic, and it hardly moistens the fingers; while that of diseased meat is soft and wet, in fact, it is often so wet that the liquid matter of the blood runs from it; in which case it is technically styled 'wet.' Good meat has but little odour, and this is not disagreeable; whereas diseased meat smells faint and cadaverous, and often has the odour of medicine. This is best observed by cutting it and smelling the knife, or by pouring a little warm water on it. Good meat will bear cooking without shrinking, and without losing very much in weight; but bad meat shrivels up and it often boils to pieces."

SUBSTITUTE FOR BEEF.—The scarcity and dearness of meat, arising from the wholesale destruction of cattle by the Rinderpest, have had the effect of directing the attention of the British public to other sources from which a supply of wholesome food may be obtained. We extract the following from an able paper on the subject, which appeared in a late issue of *The Farmer* (Scottish):—"Notwithstanding the scarcity of animal food, the public rebel, with a pertinacity somewhat marvellous, any attempt to introduce an aliment which is of a suspicious character. Before they ever take kindly to jerked beef, they must have a guarantee of its genuineness, and must properly be convinced that it is a sound and wholesome article of dietary. Popular prejudices will then disappear before practical benefits and truth. A most laudable effort is now being made to carry out this object, and which is deserving of every encouragement and support. A number of gentlemen have formed themselves into a limited liability company, having ascertained the best method of curing meat, and also of preserving it in a raw state—the first process being by salting, drying, and the injection of pure brine and nitre; and it is within the range of possibility to keep the meat even perfectly fresh, by depriving it of oxygen, either by a chemical process or the application of an air-pump. It is proposed that boxes of this palatable meat, both beef and mutton, should be submitted to careful examination by duly qualified parties. The extract of meat, or soup tablets, have also recently been brought before the public, and is regarded by the faculty as the most nutritious of viands, and can be only purchased at the present time at a very high price. It is composed of the pure juice of the meat, its restorative qualities are very great, whilst the system of preparing it enables it to be kept for any reasonable length of time, and under almost any circumstances. The curing and importation of these preserved foreign meats should be, at first, under governmental or some official control, so that the public may be protected from the attempts of the unprincipled to foist carrion upon the market to serve their own nefarious ends. The persons owning the saladeros or salting places, in South America, in turning to account the millions of cattle at their command, must be supplied with the appliances to enable them to do so efficaciously and well. This can only be accomplished by the combination of capital and collective effort. In this limited liability age, when financial associations are springing up with a celerity truly marvellous, and are, moreover, realizing the most astounding profits, to what branch of the national economy can they turn with such a certainty of golden results?"

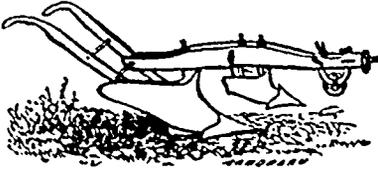
The Household.

Homedale Farm.

PLOUGHING.

PETER had been busy with the plough for some time before the arrival of the family at the farm, and considerable progress had been made in preparing land for spring crops. One of the first jobs assigned him after the removal, was breaking up the ground selected for the kitchen garden, and for an extension of the orchard; for Mr. Perley not only intended to renovate and graft the old trees, but plant a number more. As the hurry of spring work was now on, a second hand and another team became needful. Both Peter and the newly-hired man were directed to harness up their teams, and be in readiness for the garden and orchard ploughing. As the children might naturally be expected to take an interest in the preparation of the ground intended for such uses, Mr. Perley deemed it a good opportunity to give them a little instruction about ploughs and ploughing. So while the men were getting their teams in order, he and the young folks betook themselves to the scene of operations. "Charley," said Mr. Perley, "get a spade that we may examine how deep the plough has gone heretofore, and see what condition the soil is in." Charley accordingly brought a spade, and began to dig straight down into the earth. The first five or six inches were of light, yellowish, sandy loam streaked with dark mould or remains of decayed plants and manure. Below was hard pan, showing that the ground had never been stirred to that depth. On digging into the hard, compact earth, it had a very barren, hungry appearance. "These few inches of good-looking soil on the top of the ground," said Mr. Perley, "are too shallow a bed for growing superior crops, we must stir the earth to a greater depth. Mr. Turnberry didn't know he had another farm lying underneath the one he has been tilling so long." "Why, how can that be?" asked Charley. "If the soil be loosened and enriched twice its present depth," replied Mr. Perley, "it will yield double the increase it has done in the past. If one acre be thus made to produce as much as two formerly did, is not this finding a new farm under the old one?" "O yes, I see it now, papa," said Charley. "This matter of deep tillage," continued Mr. Perley, "is very little understood by farmers. Most of the ploughing done by them is mere surface scraping. They go down five or six inches, and leave all below untouched, as if the soil ten or twelve inches below the surface were good for nothing. There are many excellent farmers in England; but even in that country, the celebrated Mr. Mechi says, he believes four inches (solid) is the full average depth of ('the British agricultural pie-crust,') as he calls it, in which plants are to grow, whose roots, if permitted, would go down several feet. The roots of strawberry plants and grape vines have been known to descend several feet in search of food and moisture. Some common vegetables will go down equally far, if not farther, provided they have the chance. A gentleman in England, Dr. Dixon, of Rivenhall, once pulled up a parsnip with a root 13 feet 6 inches long, and notwithstanding its great length, there was still a piece left in the ground. This famous parsnip grew in a bank of earth 20 feet deep, that fell over loosely when excavated. In growing root crops, deep cultivation is very important. In a four-inch 'pie-crust,' they are very small compared with what they are in a rich, deep bed of earth." "How can we get farther down into the hard-pan?" asked Charley. "There are several ways of doing it," replied his father. "We can put a common plough a little lower into the ground every year, and so gradually deepen the soil. An inch more every time would in a few years double the depth of the seed-bed. This is a very good way of gradually deepening the soil of a farm. Turning up

an inch at a time, the poor soil from below comes into contact with the air and manure, mixes with the good top soil, and at length it all becomes alike good. Another way is to use what is called a Double Michigan plough. There is a picture of one and of the work it does in the last CANADA FARMER which I have in my pocket. Here it is.

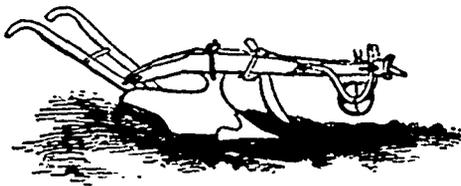


You see this plough has two shares, a small and a large one. The smaller share cuts off a thin slice of the top earth, and lays it flat, then comes the second and principal share, by which the soil that is lower down is loosened up, and thrown to the top. This is a fine plough for breaking up green sward, and you see in this engraving the kind of work it does.

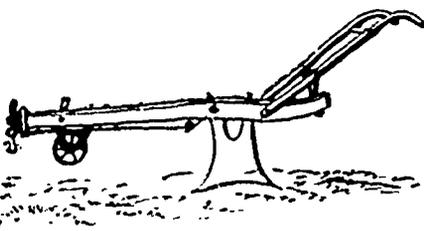


You can go down ten or twelve inches with this plough very well, but it requires a strong team to do it. Either three stout horses or three yoke of oxen are needed to pull such a plough. But it would not do to use it here, because the bottom or subsoil is not good enough to come to the top. This plough can only be used to advantage where the land is rich to a good distance down. There is another way of deepening the soil, and that is the one I am going to take. It is by using two ploughs, one after the other, the second being what is called a subsoil plough, because it follows in the furrow made by the common plough, and stirs up the under portion of the soil. But see the men are coming with their teams and ploughs, and, while I mark out the boundaries of their work, you can look at them for a while, so as to understand how the implements act that I have just named."

Accordingly, they watched the way the two ploughs operated. First, Peter went along with a common plough, fully rigged with coulter and wheel. It was much such a plough as is figured in the next engraving.



The coulter cut through the ground in advance of the share, and the wheel regulated and steadied the plough. In passing through the soil, this implement cut off and turned over a slice of earth. It went about as deep as the land had formerly been ploughed, and the flat surface just behind where it had passed, was very firm and hard. Next came the newly-hired man with a very different looking plough. It is represented in the next engraving.



This plough tore up and loosened the hard pan, but did not throw it on the top of the ground. It left it in its own place, but instead of its being compact and hard, it lay loosely and lightly. After they had

observed the action of the surface and subsoil ploughs for some time, Mr. Perley came to them and said, "Now you can see what subsoiling is. It has many advantages. It not only deepens the seed-bed, but gives manure access to the deepened soil. It lets in air which has a fertilizing influence. It has to some extent the same effect as draining, though it is most beneficial where land has been previously drained. By this process, it is easy to make a seed-bed sixteen or eighteen inches in depth, and I mean in this way gradually to subsoil the whole farm."

(To be continued.)

"WHERE'S IS THE MONKEY?"—Minney was a bright child, three years old. Fun and merriment sparkled in every feature. Upon one occasion her father took her to an anniversary of a Sunday-school. She never before been in a church, and had never heard the music of an organ, excepting in the street. The itinerant hand-organ, with its frequent accompanying piped, was her delight. The moment the first notes were struck on the church instrument, her countenance beamed with rapture; but peering about, over the shoulder of those around her, a shade of disappointment was apparent, and coming in range of her father's ear, she whispered, "Where is the monkey, papa?"

PREPARED FOR A STORM.—A few nights ago Mr. Bodkins, who had been out taking his glass and pipe on going home late borrowed an umbrella, and when his wife's tongue was loosened he sat up in bed and suddenly spread out the parachute. "What are you going to do with that thing?" said she. "Why my dear I expected a very severe storm to-night, and so I came prepared." In less than five minutes Mrs. Bodkins was fast asleep.—*American Paper.*

ONION STEW.—To two quarts of bran stock, add eight onions cut small, three ounces of lard, fat, or butter, salt and pepper. Nothing else is necessary; but if you have any bits of potato, cabbage, or other vegetable, a pinch or two of thyme, mint, or other sweet herb, some waste pieces of bread, so much the better; your stew will be richer, and more delicious for the addition. This really excellent stew would be further improved if, when the onions, potatoes and bread were soft, they were brayed fine or mashed into a pulp.

HOW TO MAKE BUCKWHEAT CAKES.—A writer in the *American Agriculturist* recommends the following method for making buckwheat cakes—"The finest, tenderest cakes can be made by adding a little unbolted wheat (or Graham) flour to the buckwheat. Less than a quarter will do. Mix with cold sour milk, or fresh (not sweet) butter-milk, which is best. The soda (emptyings are dispensed with.) when put in cold water, will not act satisfactorily. Bake at once. The heat will start the effervescence, and as the paste rises it will bake, thus preventing it from falling. Hence the culminating point of lightness is attained. The batter rises snowy and beautiful, and the pancake will swell to almost undue dimensions, absolutely the lightest and tenderest that can be baked, with not a touch of acid. More salt, however, must be added than usual, to counteract the too fresh taste, when soda alone is used. Thus the bother of emptyings is all dispensed with. Pancakes in this way can be baked at any time, and on the shortest notice. We keep our flour mixed, the Graham with the buckwheat, ready for use.

WHY CHILDREN DIE.—The reason why children die is because they are not taken care of. From the day of their birth they are stuffed with food, choked with physic, suffocated in hot rooms, steamed in bed clothes. So much for indoors. When permitted to breathe a breath of air once a week in summer, and once or twice during the cold months, only the nose is permitted to peer into daylight. A little later they are sent out without no clothes at all, as to the parts of the body which need most protection. Bare legs, bare arms, bare necks, girted middles, with an inverted umbrella to collect the air and chill the other parts of the body. A stout, strong man goes out on a cold day with gloves and overcoat, woollen stockings, and thick double-soled boots. The same day a child of three years old, an infant in flesh and blood, and bone and constitution goes out with soles as thin as paper cotton socks, legs uncovered to the knees, neck bare; an exposure which would disable the nurse, kill the mother in a fortnight, and make the father an invalid for weeks. And why? To harden them to a mode of dress which they are never expected to practice. To accustom them to exposure, which a dozen years later would be considered downright foolery. To rear children thus for the slaughter pen, and then lay it to Heaven, is too bad.



Questions on Horticultural Subjects.

To the Editor of THE CANADA FARMER:

SIR,—Amidst the increasing interest in horticulture which is visible throughout the country, there is a vast amount of ignorance on the subject; and as a natural consequence, the cultivator, after spending toil and money, is often doomed to disappointment. For several years I have been trying to raise an orchard. From experience, observation, reading horticultural works, and conversing with intelligent cultivators, I have acquired some little knowledge of the subject. But there are some points on which I am yet either in doubt or in total ignorance. As I have derived much valuable information from the horticultural department of THE CANADA FARMER, I send you a few questions, the answers to which, will, doubtless, be interesting and profitable to many of your readers, as well as myself:—

1. Where it is decided to thoroughly underdrain an orchard, what is the proper depth and distance apart to put the drains? Whether is it best to put the drains right under the trees, or in the centre between the rows?
2. Is it a good method in planting out an orchard, to plant standard apples and pears from 25 to 30 feet apart, and in the centre between the rows, each way, to plant dwarf apples and pears, plums, &c., which would bear fruit early, have their day, and disappear by the time the standards required all the room?
3. Which is the earliest good plum? Which is the latest?
4. To what extent can the quince be grown in Canada?
5. Which is the most profitable winter pear?
6. Whether is it best to raise gooseberries on a single stem, or allow them to send up young wood from the root, and cut out the old wood, as occasion requires? GOOSEBERRY JACK.

NOTE BY ED. C. F.—We will, to the best of our ability, answer your questions, but our task would have been easier if you had indicated your locality. Canada is rather a large district for which to recommend any one thing.

1. A piece of ground intended for orcharding, if of a heavy or "springy" nature, should be drained at a distance of 30 feet apart between the drains. These should be at least three feet deep, and should run down the centre of the spaces between the rows of trees. Roots of trees are very liable to get into tile drains, and sometimes completely choke them up. This result is, of course, much less likely to follow when the drains are fifteen feet from the rows than when they are almost, or immediately, underneath them. At the same time, the nature or inclination of the ground might interfere with the drains running thus regularly. Generally speaking, it is the more judicious course to drain the ground before the trees are planted.

2. Yes, decidedly.

3. The Green Gage is esteemed by pomologists to be as good an early plum, for general purposes, as any variety grown. "Reine Claude de Bay" is one of the very best late plums, but for general planting we prefer "Lombard." This variety is very hardy, very productive, and tolerably late.

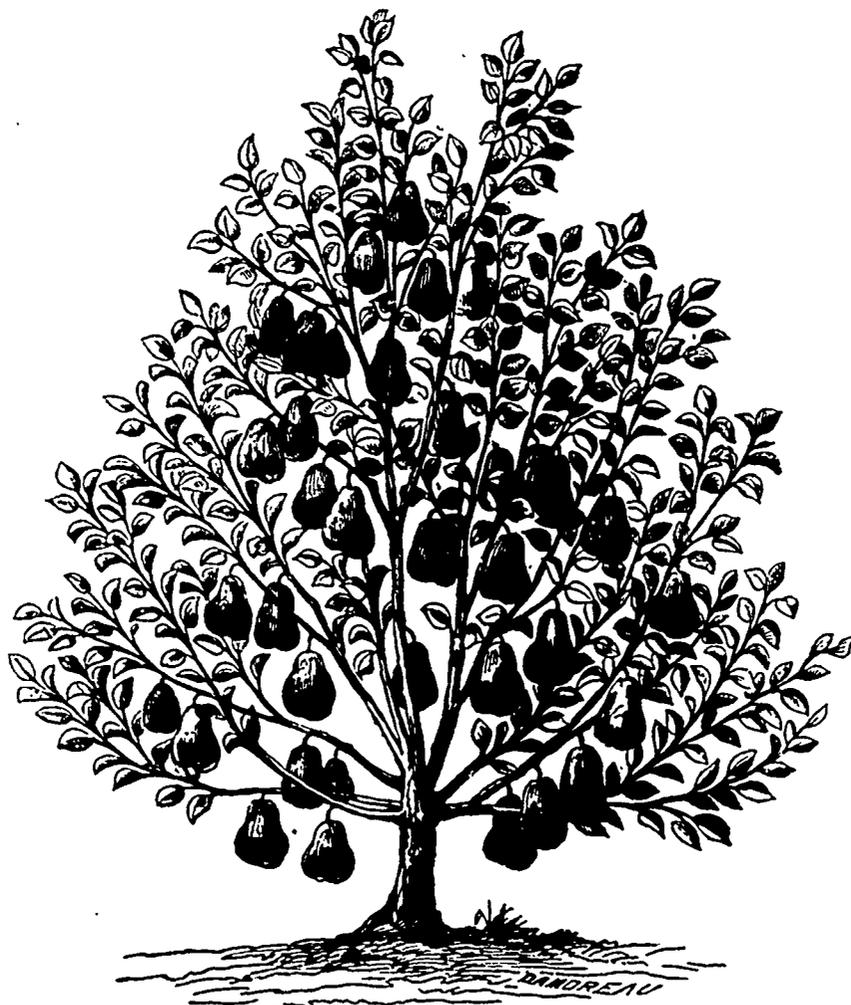
4. The Quince can only be grown with any reasonable hope of success, in the Niagara district, and in that portion of the Province south of Lake Ontario.

5. With so many excellent varieties from which to select, this query is somewhat difficult to answer. Probably the "Vicar of Winkfield"—figured and described elsewhere—possesses as many commendatory qualities as any other sort. "Jaminette" is also a very desirable variety for the colder regions. It is in season in January and February.

6. On a single stem by all means. When grown as a bush, the gooseberry cannot so conveniently be kept free from grass, which induces mildew, &c. The tree can also be more readily pruned, when grown on a single stem.

The Dwarf Pear.

For no fruit, probably, has the science of Horticulture done more for the pear; and among the many improvements to which it has been subjected, the practice of dwarfing deservedly occupies a foremost place. The process adapts the tree for culture in a small garden where a standard tree would be out of place; and, at the same time, it rewards the planter with its produce at a much earlier date than does the latter. The quince stock is generally used for this purpose. Nurserymen are in the habit of budding them upon the quince two years old; when they readily unite with the stock, and, in two years' time, make saleable trees. It is generally conceded that the pear is not only improved in size by being worked upon the quince, but that the quality of a great many of the varieties is also vastly improved. Much has been said with regard to the shortening of the life of the tree by this operation of dwarfing. It is, however, yet to be decided whether such a result arises from this process, or from the trees being planted under circumstances unfavorable to them. The pear will indeed, adapt itself to very unfavorable soils and situations; but, then it is, under these



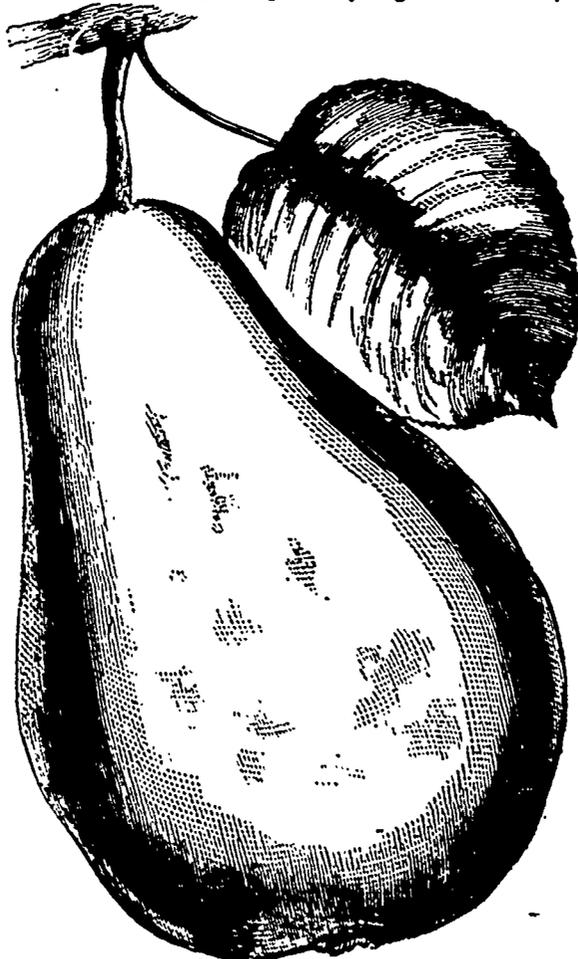
circumstances, more liable to disease than almost any other fruit. One great advantage that the pear on quince, or dwarf pear, can claim over its brother on the natural pear stock, is the certainty with which it can be successfully transplanted. This, of itself, is amply sufficient to give it a widespread preference. The quince is always supplied with an abundance of small fibrous roots, which spread out in a mass near the surface, thereby not only rendering it a very easy matter to transplant the tree successfully, but extending the limit when a tree can be moved with safety, far beyond what it is with standard trees.

The soil best adapted for the cultivation of the dwarf pear is a strong loam, not too heavy, and perfectly dry. The spot intended to plant a dwarf pear orchard upon should, if not naturally well drained, be so artificially; for the trees will not thrive when the soil is damp during a considerable portion of the year. The fruit is also affected in like manner, so as to be hardly recognizable as the same variety, when grown under more favorable circumstances. The ground, after proper preparation, should be laid off into squares, and a tree planted at the corners of each square, 12 feet apart each way. The pyramidal is the shape in which the trees are usually trained, the object being to prune in such a way as to get the greatest development of branches near the ground, and rise in a conical shape gradually to one leading shoot at the top.

While so much attention has to be paid to the art of pruning in England, our bright sun and clear sky do away with a great many of the causes which make it absolutely necessary there. To regulate and keep within proper bounds the healthy, vigorous tree, and to promote the growth and strength of the more feeble, are about the principal reasons why the pruning knife has to be resorted to. Care

should always be taken that any branch wanting to be removed, should be taken off while small enough to admit of its being cut with a knife. Summer pruning, or pinching the young shoots with

grown on the quince stock, and, although only second quality, it is always fair and large. Tree, a vigorous grower, with large, roundish, glossy leaves; shoots, diverging, dark olive colour."



Culture of the Vine, and Manufacture of Wine.

BY J. M. DECOURTENAY.

In the sessional papers of 1860; No. 22, may be found a correspondence of mine, laid before Parliament, and printed by their order, soliciting assistance for the introduction of Wine and Silk culture into Canada. The Bureau of Agriculture then promised that every assistance should be given, when I could demonstrate, in a practical manner, the correctness of my views. In soliciting assistance from Government, I never stipulated for personal advantages; yet, since then, I have been taxed with "exorbitant pretensions" and "chimerical views," by men who were unable to confute my theories, to deny the facts I had practically established, or to comprehend the motives that actuated, or the sentiments that animated, me. I based my application upon the principle that the first production of good wine in a country must be obtained by *Agricultural Experience alone*—and that private enterprise could not be expected to undertake the expenses of an undertaking which could not, by any means, remain a privilege. In corroboration of which, I quoted the Count de Gasparin, Vol. 4, pp. 616 to 618, as an authority.—"If the variety of wine to be produced already exists in the country, we can accept it, and it will be sufficient to consult the best producers and conform to their practice; but chemical analysis has not been able to indicate qualities in advance, and it is therefore to *Agricultural Experience alone* that we must address ourselves, for the knowledge required."

A parliamentary committee has since then recommended assistance, but no action of any kind has yet been taken, and in the meantime, myself and my friends have solved the problem, unassisted.

I am preparing the history of our efforts, and hope to publish it before many months; whilst in the meantime, both this country and Europe will be enabled to form an opinion of the quality of our productions, as the first produce of the Clair house vineyards will, before many months, be in the markets.

Wine is the antidote of Dyspepsia and Delirium Tremens—has even at the same time banished the use of spirituous liquors, and “made the heart of man glad.” It seems to be a necessity of the human organization. It awakens the forces of the stomach, and exercises an action of radiation upon the entire nervous system, and the complicated vital functions, and appears to be a beverage indispensable to man—being that which is the most easily obtained, the most agreeable, and the most generally appreciated, which is proved by the fact of the exclusion of all others within the climates where it can be produced. But in order that wine should be within the reach of all classes it must be produced of every quality and of every price. Good, ordinary wines are the only real basis upon which such cultivation can be established: for it must be remembered that, as for every other description of merchandise, poor consumers are the most numerous. Unlike most other productions, it is by no means a defined substance, presenting everywhere the same composition.

For some, it is a delicate beverage, the merit of which consists in the odour or “Bouquet,” in the unctuous and agreeable savour to the palate, much more than in the greater or less quantity of alcohol it contains.

For others, it is only a spirit, more or less diluted; and between these extremes, all tastes and necessities may be discovered.

But, in the wine-growing countries, the mass of consumers are poor; so are the ordinary wines the most numerous, and their value more easily appreciated. With regard to fine wines, you can discover no other criterion than the palate of the connoisseur, whose opinion will only be guided by an acquired taste, or by the fashions of the day.

A great number of questions present themselves to the wine-grower, in a new country, where no agricultural experience can guide him, and the problems he must solve are so complicated and so numerous, that I cannot at present discuss the Agricultural, Economical, and Commercial considerations necessary for relating to, or dependant upon—the success of so arduous an undertaking.

CONDITIONS OF SUCCESSFUL CULTURE.

I have previously remarked elsewhere that the great art of vine culture consists in planting and pruning—which can only be acquired by considerable practical experience. Pruning of any description, and there are five hundred different methods, is by no means arbitrary. Both that and the distance to be preserved in the rows (and the former is always regulated by the latter) must depend altogether upon the nature of your climate, the inclination of your land, and the vigour of the vine you propose to cultivate. As you approach the southern portion of the region, you must allow your vines to rise, and also extend the distance between the plants, which practice is based upon the vigour of the vine, which diminishes as you approach the North; for although in the South, it furnished the staircase of Diana's temple of Ephesus, in the North it would not produce the wand of a centurion.*

Independent, also, of latitude, altitude, or the inclination of the land, the nature of the vine itself must be taken under the most careful consideration. Certain varieties have a propensity to rise before bearing abundant fruit, and are generally to be found amongst the wild grapes of all countries, as the “Vignes de Treilles,” of France, and the “Pergulanes,” of Italy; and it is only from their horizontal branches, “Guerlande” that you can hope to obtain an abundant fructification.

The vigour of their vegetation, if allowed to run wild, will expend itself in wood branches and leaves, and if kept low and short, the same effects will be produced.

Monsieur De Gasparin, in his “Cours d'Agriculture,” vol. 4, page 667, exemplifies this doctrine in an interesting manner: “We made an experiment upon a vine from Corinth, brought home from the expedition of Morea, in 1828. Kept low for fourteen years, it produced a very small quantity of fruit, used only as samples. Having then been allowed to climb upon a neighbouring tree, it covered itself with fruit, and gave that year a quantity sufficient to furnish a ‘hoctolitre’ (25 gallons) of wine.”

I presume many persons in this country have remarked amongst the wild vines, that some prefer to climb to the summits of the highest trees, whilst others content themselves with spreading over brushwood. The same thing exists in Europe, and in a greater degree with the cultivated vines, (vitis vinifera,) whose natural propensities have become fixed habits, from many centuries of judicious pruning; and those varieties that have long been preserved low, would wear themselves out immediately if allowed to rise, or if the mode of pruning was materially altered. At the same time all varieties, if abandoned to themselves, produce an innumerable quantity of branches, and either perish or become wild within three years.

As the vigour of the vine varies according to the climate, and increases as it approaches the south, so (in the same proportion) does the distance between the plants extend itself—and the increasing evaporation of the vine makes it absolutely necessary to allow a greater cube of earth, so that the roots may extend themselves, and absorb the degree of moisture requisite for vegetation.

In our climate (including that of Lower Canada) I have planted in squares of four yards distance, and pruned accordingly, and I find I have by no means over estimated the nature of the climate, or the vigour of the plants. In Cincinnati they have estimated their climate and their vines according to the feeble vigour of an extreme northern limit, (Gormany) and plant at distances of two or three feet, pruning of course accordingly. By my estimate of their climate, I should judge at least eight yards as the distance to be preserved. Had they obtained the assistance of able and scientific wine growers from Europe; they would not have been groping for thirty-five years after (in my opinion) unsatisfactory results. But the ordinary labourers they have employed, and by whose advice they have been guided, however useful they might have been in their own climate, are hardly to be depended upon elsewhere, unless under a reasoned direction, and an experience newly acquired.

After deciding upon the distance to be preserved between the plants, and consequently upon the manner of pruning them, the next and the most important consideration for the vine-grower, in a new country, where he cannot be guided by agricultural experience, is undoubtedly the choice of plants. Before entering into many necessary details upon this very difficult question, I must first endeavour to explain the principles upon which are carried—on the manufacture of pure wines,—which, as a general rule, are difficult (if not impossible) to be obtained outside the limits of the region of the vine. It is an undoubted fact that the best French wines are sold in France, and bring there the highest prices. The value of those exported are more easily calculated, by the amount of alcohol they contain: I believe that Chateau Lafitte, or Chateau Margaux have never fetched less than ten francs a bottle (\$2.) and therefore all may judge how much of such wine may be obtained in this country.

The following analyses of some of these valuable wines, by one of the most able French chemists, Monsieur Faure, will show that such value can not be attributed to the amount of alcohol they contain:

BORDEAUX WINES.	
Alcohol	9 488
Tannin	0 112
Bisulphate of Potass	0 160
do of Iron	0 059
Inorganic Salts	0 022
Colouring Matter Blue	0 019
do Yellow	0 022
Water	90 053
	100 000

I find that Chateau Lafitte the most celebrated of those wines, contains only 8.70 of alcohol, and Chateau Martillac only 8.75. Their value, therefore, evidently consists in the organic salts of potassi, and of iron, and above all in the quantity of tannin they contain. It is necessary to endeavour to obtain an association of plants in a vineyard, that united, will furnish the kind of wine you desire to produce.

De Gasparin says: “If your wines are too sweet, and want ferment, correct them by planting vines that possess contrary qualities. If abundant in sediment, or likely to turn into vinegar, supply the deficit by planting vines possessing a great deal of tannin; and it is not only necessary to calculate the taste required, but also the degree of colour preferable to consumers.”

But I must, before going any further, say that in this country, the question of the greatest importance must be to use no vines whatever having (what has become almost a slang expression) a foxy flavour. That very disagreeable flavour belongs to almost all the grapes hitherto used in America, for the manufacture of wine. The Cattawba, Isabella, and Hartford Prolific are examples. The Clinton, the Delaware, and most of the wild vines of Canada, are altogether exempt from it, and with the Golden Chassalas, and other varieties which I shall afterwards examine, will ultimately, I doubt not, form the great basis of the future vineyards of this country, — I might say of North America. However, before entering further into details or minute calculations on this matter, I must endeavour to explain the great principles upon which the amalgamation of different varieties of grapes, and their metamorphosis, into wine consist.

1st. Almost all out-door grapes contain within themselves the material necessary for the production of wine, which are sugar, water, and free acids.

2nd. Only perfectly sound and ripe grapes, in the centre of the vine region, can furnish them in proper proportions; and even then only by a judicious mixture of several varieties.

3rd. The extreme southern portion of the wine region, furnishes an excess of sugar, with a deficiency of water, and of acids.

4th. The extreme northern limit (being the portion where Indian corn ceases to ripen), holds an excess of acids, being at the same time deficient in both water and sugar.

In the northern portion of the wine region, more than thirty per cent. of sugar is rarely produced, by the most sugar producing varieties of the grape, inferior varieties in the same region often producing only eleven per cent. In the southern portions of the region, fifty per cent. is no uncommon production, and the Island of Cyprus furnishes grapes producing eighty-four per cent. Indeed it is this propensity of the southern grape to produce sugar at the expense of its acids and organic salts, that prevents wine of any value being made to the south of the forty-fifth (45th) degree of north latitude. And very often it can not be made at all from these grapes, for the reason that they do not contain sufficient ferment to effect any change in their juices, preserved from fermentation by the saccharine matter with which they are over-charged.

The Tomato.

The tomato is a native of South America, and was introduced into England as early as 1596. For a long time it was cultivated only for the ornamental appearance of the fruit, it being a common notion that it was not only unwholesome as an article of food, but absolutely poisonous. For this latter supposition there was some reason in fact, as the plant contains more or less of the poisonous principle which pervades the whole family to which it belongs. This family or group of plants is the Solanaceae, and we have already mentioned the potato as one of its members. Any one who calls to mind the leaves, stems and flowers of both the potato and the tomato will perceive a marked resemblance between these two plants. Not only are they alike in appearance, but they are alike in this, that they contribute largely to the comforts and wants of man. But their methods of making these contributions are very different. In the potato a large supply of starch is stored up in an underground stem; in the tomato, the fruit becomes fleshy, and is highly nutritious and wholesome. In the tomato there are no underground stems, nothing but roots below the surface. In the potato, the fruit, or ball, does not become fleshy and edible. Nature has a multitude of ways in which she subserves the wants of man, and it is very interesting and instructive to study them. The poison which exists in the tomato is so small in quantity that it becomes dissipated by cooking or by the ripening of the fruit.

The tomato first began to be used as an article of food in Italy, afterwards in France, and finally in England. In this country it has come into general use within the last twenty years. Previously it rejoiced under the name of love-apple, and was grown by housewives only to be looked at. To nearly every one the flavour of the fruit is at first disagreeable, but there are few who do not soon become accustomed to it and esteem it one of our best garden vegetables.

The botanical name of the large garden tomato is Lycopersicon esculentum. The first literally means wolf peach, referring to the fine appearance of the fruit and its supposed deceptive character. The latter name refers to the esculent or eatable fruit, and came into use much more recently than the former. The small, cherry tomato, sometimes cultivated for pickles,

*Flay, Book 14, Chap 5.

is a different species from the above. The numerous varieties of the tomato are the result of cultivation, or perhaps some of them may be hybrids between the species. Those varieties are best which have a smooth, uniform outline, and solid, good flavoured meat. With a little care in selecting seed, tomatoes of almost any shape and quality may be grown. The tomato is very easily cultivated. Being a half-hardy annual, and requiring the entire heat of our summers to produce a full crop, it is necessary to start the plants in a hot-bed, so that they shall have attained considerable size before the advent of warm weather. Give the plants plenty of room in the hot-bed, so that they may become stocky and strong, and if transplanted in the bed before putting into the open ground they will be all the better and stronger for it.

It is better to train the plants to some sort of trellis than to let them lie upon the ground, and cutting back the branches so as to expose the fruit to the sun is very beneficial. A good way is to train the plants to a south wall, in the same manner that grapes are trained. In this way the fruit receives the benefit of radiated heat from the wall, and is hastened in ripening. Sometimes the main stem of the plant trained in this way will reach a height of ten feet, with regular side branches, and all loaded with the finest fruit. In open garden culture, a good way is to make a trellis about three feet high of stakes and lath, and train the plants to it as they grow, keeping them down to a moderate size. In this way more good will be obtained from a half dozen plants than from a dozen allowed to trail upon the ground. —*W. Rural.*

The Flower Garden.

Most people have yet to learn the true enjoyment of life; it is not fine dresses, or large houses, or elegant furniture, or rich wines, or gay parties, that makes homes happy. Really, wealth cannot purchase pleasures of the highest sort: these depend not on money or money's worth; it is the heart, and taste, and intellect, which determine the happiness of men; which give the seeing eye, and the sentient nature, and without which man is little better than a walking clothes-horse.

A snug and clean home, no matter how tiny it be, so that it is wholesome; windows into which the sun can shine cheerily; a few good books and papers; no duns at the door; a neat and cheerful flower garden without, with flowers in your room; and there is none so poor as not to have about them the elements of pleasure.

Nature tells us to be happy, to be glad, for she decks herself with flowers—and the fields, the skies, the thickets, the dells, the mountains and the prairies, the morning and evening sky, are robed in loveliness.

The "laughing flowers" exclaims the poet; but there is more than gaiety in the blooming flower, though it takes a wise man to see its full significance. There is the beauty, the love, and the adaptation, of which it is full. Few of us, however, see any more deeply in this respect than did Peter Bell:

"A primrose by the river's brim,
A yellow primrose was to him,
And it was nothing more."

What can be more innocent than flowers? Are they not like children undimmed by sin? They are emblems of purity and truth, always a new source of delight to the pure and innocent. The heart that does not love flowers, or the voice of a playful child, is one that we should not like to consort with.

Flowers have a voice to all—to old, to young, to rich and poor, if they would but listen, and try to interpret their meaning. "To me," says Wordsworth, "the meanest flower that blows can give thoughts, that do often lie too deep for tears." Have a flower garden, then, by all means. Have flowers in your room; it will cost but a trifle, and the gratification it will give you, will be beyond all price. If you can have a flower for your window, so much the better. What can be more delicious than the sun's light streaming through flowers—through the midst of crimson fuschias or scarlet geraniums? Then to look out into the light through flowers—is not that poetry? And to break the force of the sunbeams by the tender resistance of green leaves? If you can train a nasturtium round the window, or some sweet peas, then you have the most beautiful frame you can invent for the picture without, whether it be the busy crowd, or a distant landscape, or trees with their lights and shades, or the changes of the passing clouds. And what a pure taste and refinement does it not indicate on the part of the cultivator. There are, we doubt not, many who may read these pages, who can enter into and appreciate the spirit of all that we have said; and to those who still hesitate, we would say—begin and experiment forthwith, and do not let another season pass away without flowers and a flower garden. —*Rural World, St. Louis.*

Miscellaneous.

PORTLAND CEMENT.—We have found this a very useful article to the gardener. Made into a thin solution like white-wash, it gives wood-work all the appearance of having been painted and sanded, and may, for ought we know, have as preservative a property. Piles of stone may be set together with common mortar, and then the whole washed over with this cement, making it look like one immense rock of grey sandstone. For temporary use, a flour barrel may have the hoops nailed, so as not to fly apart, and the inside washed with ten cents worth of Portland Cement, and it will do for a year or more to hold water. Boards nailed together, and washed with it, make good hot water tanks; and in so many ways is it of use, that we have come to look on it, as one of those peculiar things in a garden which it is "always good to have about." —*Gardeners' Monthly.*

PROPERTIES OF CHARCOAL.—Among the many properties of charcoal may be mentioned its power of destroying smell, taste and colour; and as a proof of its possessing the first quality, if it be rubbed over putrid meat, the smell will be destroyed. If a piece of charcoal be thrown into putrid water, the putrid taste or flavour will be destroyed, and the water be rendered completely fresh. Sailors are aware of this; for when water is bad at sea, they are in the habit of throwing pieces of burnt biscuit into it to purify it. Colour is materially influenced by charcoal, and, in a number of instances, in a very irregular way. If you take a dirty black syrup, and filter it through burnt charcoal, the colour will be removed. The charcoal of animal matter appears to be the best for this purpose. You may learn the influence of charcoal in destroying colours, by filtering a bottle of port wine through it; in the filtration it will lose a great portion of its colouring and become tawny; repeat the process two or three times, and you have destroyed it altogether.

ABOUT ORDER.—Put things right back in their own place when done with. Never leave them all about helter skelter, topsy-turvy, never. When you use any article, hoe, shovel, rake, pitchfork, axe-hammer, tongs, boots or shoes, books, slates, pencils, writing apparatus, pins, thimbles, pin-cushions, needles, work-baskets, kitchen furniture, every article of house-wifery or husbandry, no matter what it is, the very moment you have done using it, return it to its proper place. Be sure to have a special place for everything, and everything in its place. Order, order, perfect order, is the watchword, Heaven's first law. How much precious time is saved (aside from vexation) by observing order, systematic regularity! And little folks should begin early to preserve order in everything. Form habits of order. These loose, slipshod, slatternly habits are formed in childhood, and habits once formed are apt to cling for life.

Young friends, begin early to keep things in their proper places; study neatness, order, economy, sobriety; in everything be just, honest, pure, lovely, and you will have a good report. —*Rural New Yorker.*

JOSH BILLINGS ON LAFFING.—Laffing is strictly an amusement, although some folks make a bizzness of it.

It has been considered an index of character, and there is some so cluss at reasoning that they say they can tell what a man had for dinner by seeing him laff.

I never saw two laff alike.

While there are sum who don't make enny noize, there are sum who don't make anything but noize—and sum, agin, who hav musik in their laff, and others who laff just as a rat does who haz caught a steel trap with his tale.

There is no mistake in the assershun that it is a cumfort to hear sum laffs that cum romping out ov a man's mouth—like a distrik skool of young girls just let out tew play.

Men who never laff may have good hearts, but they are deepsected—like sum springs, they have their inlet and outlet from below, and show no sparkling bubble on the brim.

I don't like a giggler; his kind of laff is like a dandyion, a broad yellor, with no bit of good smell about it.

It is true that enny kind ov a laff, if it iz honest, iz better than none; but give me the laff that looks out of a man's eyes, fust, tew see if the coast is clear, then steals down into the dimple of his cheek and rides in an eddy there awhile, then wags a spell at the corner of his mouth like a thing of life, then bursts its bonds of beauty and fills the air for a moment with a shower of silvery-tongued sparks, then steals bak with a smile tew its lair in the heart tew watch agin for its prey—this is the kind ov laff that I lav and ain't afraid ov.

Advertisements.

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DEOS to inform his friends and the public, that the Eleventh Annual Issue of his

CULTIVATORS' GUIDE, Or Descriptive Catalogue of Seeds of all kinds, for the ensuing season, IS NOW READY!

And intending purchasers may have a copy of it gratis on application. It contains a list and the prices of all the leading varieties of seeds for the garden and farm, which he offers for sale, together with a large number of some striking novelties of recent introduction, illustrated with over 20 artistically executed engravings, and a great variety of useful information respecting sowing of seeds, &c. Parties at a distance wishing to purchase seeds, may have a copy by sending two cents (postage free) to my address.

J. A. SIMMERS,
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A SIMPLE, substantial, cheap, and effective Machine. Also manufacturers of the

PREMIUM FARM CRIST-MILL,
And every variety of AGRICULTURAL IMPLEMENTS. Send for Descriptive Circular, and address
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Resident Agent of the Company,
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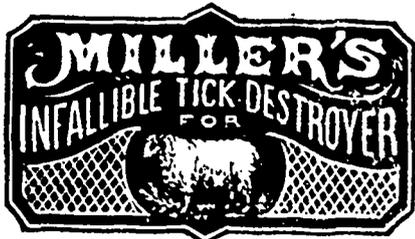
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A CERTAIN cure for Tick, and all skin affections in Sheep. No flock master should be without it. Prepared only by HUGH MILLER & CO., Chemists, Toronto.

THE SHEEP DEPARTMENT AT THE NEXT PROVINCIAL EXHIBITION.

In reply to the communication of "An Exhibitor," which appeared in the last issue of THE CANADA FARMER, in reference to the rule of the Board of Agriculture, that Sheep intended to be exhibited at the Provincial Show shall not be shorn sooner than the First of April, notice is hereby given that the rule will be enforced.

By order of the Board.

HUGH C THOMSON, Secretary

J. H. THOMAS' FIRST-PRIZE BEE HIVES

MAY be sent safely to any part of Canada. We are daily sending them to all parts of the Upper and Lower Provinces, and even to Nova Scotia and Cape Breton; and the demand is increasing.

The territory of the Lower Province will be sold cheap, as we have sufficient in Canada West for our own purposes.

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J. H. THOMAS & BROS. beg to announce that the First Edition of the above work having been exhausted, a Second Edition, revised and corrected, has been got out, and is now on sale.

Price of Single-Boarded Hive, \$5, Double-Boarded Hive, \$7, including right to make and use.

Letters to be addressed (post-paid), to

J. H. THOMAS & Bros., Brooklyn, Canada West.

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I HAVE for Sale TWO YOUNG GALLOWAY BULLS—"Logan," 17 months old, and "Canboe," 12 months.

JOHN SNELL,

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Chinguacousy, March 5, 1866.

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So simple of Construction that every Farmer can make it, if supplied with the plans.

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South west cor of King and Yonge-sts., Toronto.

Toronto, Oct. 2, 1864.

v2-19-1f

Markets.

Toronto Markets.

"CANADA FARMER" Office, March 15, 1866.

During the past fortnight there has not been much change to notice in the general trade of the city. The market has as a rule been quiet, and but few large transactions have taken place.

Flour.—Few transactions; No. 1 \$5 to \$5 25, Extra, \$7 to \$7 25; Double Extra, \$7 75 to \$9 33.

Barley.—Higher. Selling at 60c to 65c for best light samples; 55c being given for an extra quality for seed, medium to bright 55c to 60c.

Peas.—Advanced from 63c to 66c. Oats.—Car loads sell at 30c to 31c, street price from 30c to 35c.

Butter.—Butter in good demand for the American market, 16c to 19c for keg, choice dairy, 19c to 21c.

Poultry.—In fair demand; Chickens 40c to 60c per pair, retail; Ducks, 45c to 65c retail; Geese, 6c to 7c per lb., Turkeys, dressed, 9c to 10 1/2c per lb.

Hogs.—Selling at \$7 30 to \$7 70 per cwt.; pork dull, mess, \$0 50 to \$2 22 per bri; primo do, \$1 8 to \$1 9.

Live Stock.—The market is moderately active and prices are firm. The figures here given are off red by the butchers and drovers in this market per 100 lbs., dressed weights.—Cattle, 1st Class, \$5 60 to \$6, do. 2nd class, \$4 60 to \$5 50, do. inferior \$4 to \$4 50.

Hamilton Markets, March 12.—Beef, per 100 lbs., \$4 75 to \$5. Mutton, per lb., 4c to 6c. Pork, per 100 lbs., \$7 to \$7 50.

London Markets, March 12.—Fall Wheat, per bushel, superior, \$1 20 to \$1 40. Spring Wheat, do, \$1 05 to \$1 08.

Detroit Markets, March 12.—Flour—Unchanged at \$8 25 for brands from No. 1 spring, \$9 75 for red winter, \$11 from white; and at \$11 75 for double extra from white wheat.

Buffalo Markets, March 12.—Flour—The market rules steady, with a fair demand. Canada bakers at \$8 25 to \$8 50, ordinary spring, \$7 50 to \$7 75; XX white Canada at \$11, XX white Indiana at \$10 60.

New York Markets, March 12.—Flour—Receipts 5,347 barrels; market dull, and common grades 10c lower, sales 4,100 barrels, at \$6 80 to \$7 30 for superfine State; \$7 to \$7 75 for extra State, \$7 80 to \$8 30 for common to medium extra Western; and \$8 15 to \$8 80 for common to good shipping brands extra round hoop Ohio Canada flour dull, and common grades dropping, sales of 260 barrels, at \$7 50 to \$8 25 for common, and \$8 30 to \$11 75 for good to choice extra.

British Gleannings: Death of a Distinguished Horticulturist. Disease among Bees. A Horse of Principle. Female Pedestrianism. Medical Properties of the Blackberry. Winning and Beautiful Southdowns. How to Know Good from Bad Meat. Substitute for Beef.

The Household: Homestead Farm, with four cuts. Where's the Monkey? Prepared for a Storm. Onion Stew. How to Make Buckwheat Cakes. Why Children Die.

Horticulture: Questions on Horticultural Subjects. The Dwarf Pear, with two cuts. Culture of the Vine and Manufacture of Wine. The Tomato. The Flower Garden.

Miscellaneous: Portland Cement. Properties of Charcoal. About Order. Josh Billings on Lolling.

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