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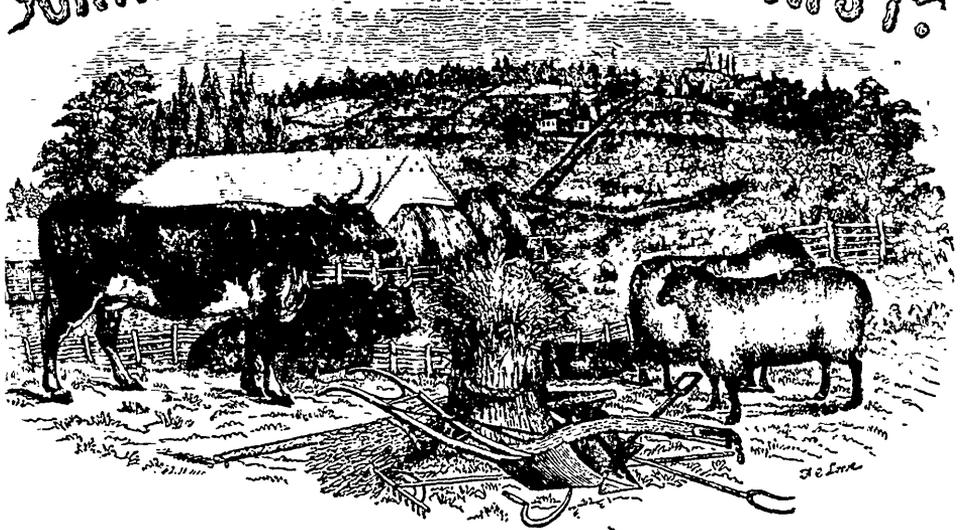
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# CANADIAN AGRICULTURIST.



"The profit of the earth is for all; the King himself is served by the field."—ECCLES. 5, ix.

GEORGE BUCKLAND, }  
WILLIAM McDUGALL, }

{ EDITORS AND  
PROPRIETORS.

VOL. I.

TORONTO, MARCH 1, 1849.

No. 3.

## TO READERS AND SUBSCRIBERS.

This number of the *Agriculturist* completes the three of this volume, which we promised to send to all our last year's subscribers, whose subscriptions were paid up. But as several agents have neglected to send proper lists of the *paid* and *un-paid* subscribers (and indeed have neglected to send us anything but the names), we have not been able to make the distinction we had intended, and have therefore sent the first three numbers of the present volume to *all* subscribers for 1848. Some of these subscribers commenced with the latter part of the volume of the *Canada Farmer* for 1847, and have consequently got a much greater quantity of matter than was promised them. We hope those who have not yet paid will forward the *dollar* as soon as possible. There is still a considerable debt due for the printing of the *Farmer* as well as for the *Agriculturist* for 1848, which falls upon the shoulders of one of the present proprietors, and unless the amount due him from agents and subscribers is realized, he will sustain a much heavier loss than was anticipated, or than he is very well able to bear. Two or three societies have also neglected to pay us; we hope they will not require a *special* invitation. Apart from the justice of the matter, we trust every person who has read the paper will feel a sufficient interest in its success to "pay the printer."

Money enclosed in a letter, and addressed to the "Editors of the *Agriculturist*, Toronto," will come perfectly safe. As we shall employ but few agents this year, those who wish to pay for the last, or subscribe for the present volume, need not wait to be called upon.

Payment in advance being the only system that will answer for a publication so cheap as ours, we shall

send the remainder of the volume to none but those who order and pay for it.

Subscribers who desire to continue the work, will do well to send their orders without delay, for, as we do not mean to print a large edition with the view of having a surplus, we cannot promise that at the end of two or three months we shall have any back numbers on hand.

TRAVELLING AGENTS.—MR. T. M. MUNN is our Travelling Agent for the Eastern section of the Province; Mr. PALMER, for the Northern; and we hope soon to announce one for the Western.

LOCAL AGENTS.—Any person may act as a local agent. We hope that all those who have heretofore acted as such, will continue their good offices, and that many others will give us their influence and assistance in the same way. Any person who will become a local agent may entitle himself to a copy by sending four subscriptions. Those sending twelve and upwards will be supplied at 3s. 9d. per copy.

## THE CANADIAN AGRICULTURIST,

A MONTHLY JOURNAL OF AGRICULTURE, HORTICULTURE, MECHANICAL AND GENERAL SCIENCE, DOMESTIC ECONOMY AND MISCELLANEOUS INTELLIGENCE; Published by the Proprietors, W. McDUGALL and GEO. BUCKLAND, on the first of each month, at their Office, near the South-West corner of King and Yonge Streets, Toronto.

Subscription, One Dollar in advance. Advertisements 4d. per line each insertion.

Societies, Clubs, or local Agents ordering 12 copies and upwards, will be supplied at 3s. 9d. per copy,

**SEED WHEAT.**

A QUANTITY of very superior CAPE SPRING WHEAT, grown by CAPTAIN SHAW, Oak Hill, Toronto, for sale by the Subscriber, at 7s. 6d. per Bushel.

JAMES FLEMING,  
Seedsman, Yonge Street.  
3-2in.

Toronto, Feb. 28, 1849.

**PHENIX FOUNDRY,**  
No. 58 YONGE STREET, TORONTO.

GEORGE B. SPENCER,  
(LATE C. ELLIOT.)

CONTINUES every Branch in the above Establishment, as heretofore; and in addition, keeps constantly on hand a good assortment of COOKING, PARLOR, BOX and AIR-TIGHT STOVES, of the most approved patterns.

Also, a SECOND-HAND ENGINE, with or without the Boiler, 12-horse Power, will be sold very cheap for Cash or short payment.

Toronto, Jan, 26, 1849. 1-1f

**MAMMOTH HOUSE.**

**New Dry Goods & General Outfitting Establishment,**

*Opposite the Market, King Street East, Toronto.*

THOMAS THOMPSON respectfully solicits the attention of his numerous friends throughout the country to his large and well-assorted Stock of

**STAPLE AND FANCY DRY GOODS,**

particularly adapted for the Country Trade, consisting of Woollen Cloths, Blankets, Flannels, Sheeting, Hosiery, Prints, Cloaks, Bonnets, Factory Cottons, Cotton Warp, &c., with an immense Stock of Hats, Caps, Furs, &c.; together with a large and general assortment of

**READY-MADE CLOTHING,**

sulted for the Season, and manufactured on the premises; also, a well-assorted stock of Ladies', Gentlemen's and Children's BOOTS and SHOES, of every description, and at unusually low prices; the whole of which, with the Clothing, will be made by the best of workmen, under the direction of experienced foremen, and will be sold at unprecedented low prices.

*Farmers and Mechanics, call and try the "Mammoth House," opposite the Market.*

January, 1849.

**MESSRS. DENISON & DEWSON,**  
ATTORNEYS, &c.

*New Market Buildings, Toronto.*

January 26, 1849. .2

**SEVERN'S BOTTLED ALE.**

THE Subscriber, having resumed his former business in a convenient locality, with a large stock on hand, of a superior quality, and in prime condition, would hope to secure a continuance of the patronage and support hitherto conferred upon him.

J. D. BARNES,  
6, Wellington Buildings,

Adjoining Mr. Sterling's, King-st.

Toronto, January, 1849 1

**CASH PAID FOR WOOL.**

G. MONRO, King Street East, Toronto, still continues to pay the highest price for Fleece and Pulled Wool.

Toronto, January, 1849. 1-6m

REVOLVING WOODEN AND COIL-TOOTH HORSE RAKES.—The Subscriber has received a large assortment of Horse Rakes, which will be sold at his Establishment, either for Cash or approved Notes.

G. MONRO.

Toronto, January, 1849. 1

**GARDEN AND AGRICULTURAL SEEDS.**

THE Subscriber begs to inform his friends, and the public in general, that his stock of Fresh Garden and Agricultural Seeds for the spring sowing is now complete. The Subscriber's long and practical acquaintance with his business enables him to select only such kinds of seeds as are most suitable for this climate. The vitality of each sort is fully tested before offered to the public; new varieties and such as are raised in greater perfection in Europe, are annually imported from sources that can be relied on.

Country merchants, and others, wishing seeds to sell again, can be supplied on the most moderate terms.

JAMES FLEMING,

*Seedsman and Florist, Yonge Street.*

Toronto, Jan. 1, 1849. 1

AMERICAN SCYTHES, FORKS AND HOES.—A very large assortment of the above articles for sale, wholesale and retail, by the Subscriber.

G. MONRO.

January, 1849. 1-2m



**STOVES! STOVES!! STOVES!!!**

**J. R. ARMSTRONG,**  
CITY FOUNDRY,

No. 116 YONGE STREET, TORONTO,

HAS constantly on hand, COOKING, BOX, PARLOR and COAL STOVES, of various patterns and sizes, very cheap for Cash.

Also, a New Pattern HOT-AIR COOKING STOVE, just received, taking three-feet wood, better adapted for the country than the Burr or any other Stove now in use. It has taken the First Premium at every fair in the United States, where it has been exhibited.

Ploughs, Sugar Kettles, Grist and Saw Mill Castings, Steam Engines, Sleigh Shoes, Dog Irons, and a general assortment of Castings.

Toronto, Jan. 26, 1849. 3

## CANADIAN AGRICULTURIST.

Vol. I.

TORONTO, MARCH 1, 1849.

No. 3.

## ON THE SELECTION OF SEEDS.

The season for spring operations being close at hand, we beg to call the attention of our readers to the importance of a judicious selection of seeds, and the value of root crops.

Much injury is sustained by the farmer, from sowing, year after year, seed grown by himself, or that raised in his neighbourhood from a similar soil. In selecting seed, care should be taken to procure it from a suitable soil and climate, and of a variety adapted to the new condition, in which it is intended to be placed. A change from one kind of soil to another, has generally been found advantageous in all parts of the world; but as regards climate, there appear to be numerous exceptions, even within comparatively limited areas of country. Thus it was found many years ago, that some varieties of oats, cultivated in Scotland with great success, were not at all suited to the drier and warmer climate of the south of England—the seed not properly filling in the ear, and frequently shrivelling up after blossoming. Several of the finer varieties of white wheat, cultivated in the south-eastern counties of England, have been found, after repeated experiments, to be very unsuited to the more humid climate of the western counties, and of Ireland. The same thing may be observed throughout the temperate regions of North America, particularly in Indian corn. How widely different the gigantic varieties that are so successfully cultivated in the south-western States, to the hardier and dwarfish kinds that can be made to yield only a comparatively small return in most parts of Canada. The pea may be adduced as another striking instance—no crop requiring more attention in adapting the variety to soil and climate. There is no portion of this continent, perhaps, so well suited to the pea crop as Canada. It is here much less subject to the depredation of insects than in the neighbouring States; but even here the maggot appears to be increasing every year—a fact which clearly points out the necessity of a strict attention being paid to a proper selection of seed, and a different course of rotation.

In this country, clover and timothy constitute the principal and most nutritious food for cattle,

during our severe and protracted winters. The clover crop might be very much augmented in bulk, as well as improved in quality, by sowing a more liberal quantity of good seed, with a moderate dressing of manure. The great benefit of applying gypsum (plaster) on all the lighter kinds of soils, is too well known to require any urgent recommendation. Every farmer, before sowing clover or any other small seeds, should test their vitality, which is easily done by placing a small quantity of seed in a pan of moistened earth, and exposing it to a gentle heat. It is too much the practice with dealers in the smaller seeds, to mix the old and fermented with the new—a thing which can only be ascertained by careful inspection and experiment. It is far cheaper to pay a high price for good seed, than to get what is indifferent for nothing. In this department of farming, as well as in many others, a liberal outlay at first will bring the greatest profit at last.

Increased attention to the cultivation of root crops, we regard as essential to the improvement of Canadian agriculture. The old Flemish adage holds good all over the world—"Without forage, no cattle; without cattle, no manure; without manure, no corn." Hence the importance of a proper selection of seeds, both as to quality and variety. The seed of turnips, mangel-wurzel, carrots, &c., should be saved only from sound, well-shaped, vigorous roots, that are perfectly free from mixture or impregnation with other varieties.

It is astonishing how the nutritive qualities of roots vary according to the purity of the sorts cultivated, and the nature of the soil on which they grow. Several years since, an improvement was effected in Scotland in a single variety of the Swedish turnip, by a judicious selection of the roots from which the seed was saved, that enhanced its value, it was calculated, upwards of 300 per cent! Now there can be no doubt that in Canada all kinds of agricultural produce might be increased in quantity as well as improved in quality, by paying more attention to these matters. And this might be done without any additional outlay of capital worth mentioning, by a little pains taken in selecting pure and suitable kinds of seed.

As a proof of the facility with which improved and genuine seed may be procured and propagated,

we will instance the experience of Mr. Shirreff, an eminent Scotch agriculturist. "In the spring of 1823 a vigorous wheat-plant, near the centre of a field, was marked out, which produced 63 ears, that yielded 2473 grains. These were dibbled in the autumn of the same year; the produce of the second and third seasons sown broad-cast in the ordinary way, and the fourth harvest put me in possession of nearly forty quarters (320 bushels) of sound grain!—In the spring of this year I planted a fine purple-top Swedish turnip, that yielded (exclusively of the seeds picked by birds, and those lost in thrashing and cleaving the produce,) 100,296 grains, a number capable of furnishing plants for five imperial acres. One-tenth of an acre was sown with the produce, in the end of July, for a seed crop, part of which it is in contemplation to sow for the same purpose in July, 1829. In short, if the produce of the turnip in question had been carefully cultivated to the utmost extent, the third year's produce of seed would have more than supplied the demand of Great Britain for a season!"

The importance of attending to the purity of seed, and the cultivation of suitable varieties, can scarcely be overrated. Farmers should habituate themselves to careful observation on the progress and appearance of their growing crops, and mark whatever peculiarity may arrest their attention. If, in a field of wheat, a single plant only should be found, having a larger ear, more compactly filled with grain of a superior description to the rest, this circumstance, trifling as it may appear, ought by no means to be neglected, since, by a little attention and pains taking, a new and valuable variety might be obtained. Cultivation and selection have completely changed the original character of many of our cereals, roots and fruits. Who would have supposed that the wild cabbage growing on the sea-coast could have been converted into a cauliflower,—the small wiry roots of the wild carrot into the large, succulent ones of the garden; or that the many sweet and delicious varieties of apples could have been originated from the sour crab of the woods?

There are several plants but little, if at all, cultivated in this country, that might probably be introduced to great advantage. It is the first duty of every civilized community to turn the natural advantages, with which Providence has blessed them, to some practical account; or, in other words, to raise from their own soil whatever that soil, by the aid of man's art and industry, is capable of producing. Among these desiderata might be enumerated hemp, flax, rape, mustard, lucerne—all of which the soil and climate of Canada would produce in abundance, by properly attending to their culture. As it is, we import largely most of these and other productions, which we ought to raise for ourselves. To purchase from abroad

what we can as cheaply produce at home, is an infallible way of keeping the country stationary and poor. We were told the other day, that in Toronto alone, there are upwards of a hundred bushels of canary seed sold annually. Now what should hinder this production from being raised on our own soil? This seed is worth from three to four dollars a bushel, and its culture is deserving of a fair trial on a small scale.

These considerations open up a wider field than we have now either time or space to occupy. Suffice it to say, that if proper attention were generally paid to the breeding and management of live stock, the cultivation of the best kinds of grain and root crops, and other productions adapted to our soil and climate, with the saving and economical application of manure, the real wealth of the country would be incredibly increased. These considerations are worthy the grave attention of the Legislature and Agricultural Societies.

In our next we propose giving some practical information on the cultivation of root crops, and upon plants but little known in this country. In the meantime, if any of our readers in this district should be desirous of selecting their seeds, we can confidently recommend them to Mr. Fleming, of the Yonge Street Nursery, in this city, whose diversified stock of imported and native seeds we have had an opportunity of inspecting.

## ON THE APPLICATION OF SCIENCE TO AGRICULTURE.

### NO. III.

Before we enter directly on the subject of Agricultural Chemistry, it may be desirable just to glance at a few of the principal facts and doctrines of chemical science. This will enable those of our readers, who have paid no particular attention to the subject—and it is for such these articles are chiefly designed—to form some general idea of the nature and objects of this extensive and interesting science.

All material objects with which we are acquainted, whether they exist as solids, liquids, or gases, may be separated into two grand divisions; that is, they are either *compound* or *elementary* substances. By an elementary substance is meant a body containing only one kind of matter, or consisting of only one kind of particles, admitting of no decomposition, whatever force or test may be applied. Thus sulphur, iron, copper, the pure metals, and several of the gases, are elements; that is, do what we may with them, either by mechanical or chemical means, nothing different from sulphur, iron, &c. can be obtained from them. In the present state of knowledge there are nearly sixty substances existing in nature that are considered elementary: although there are not more than a

dozen, or at most a score of these elements, which need to be particularly considered by the farmer; and of these we shall speak more in detail hereafter. Earth, air, fire and water, were by ancient writers called elements. It is not certain in what precise sense they used the term; but none of these substances are elements in the sense above explained. They are all *compounds*; that is, they are made up of two or more elementary bodies. The composition of earth is very various, consisting of salts, organic matter and metallic bases. Air is a mechanical mixture, consisting chiefly of two elements, in a gaseous form, oxygen and nitrogen; while water is the result of a chemical combination between oxygen and another gas, termed hydrogen. It is therefore evident that soils, plants, animals; all substances, in fact, with which the farmer has to do, are *compound* bodies.

Now chemistry explains *the laws* by which two or more elementary substances unite to form a *compound*, which is a substance different in its nature from any of the elements of which it is composed. Simple or elementary bodies do not combine with one another at random, but always in certain proportions; thus demonstrating the wisdom and goodness of the great Author of nature. The tendency which bodies have to unite with each other is called *affinity*, or *chemical attraction*—a force very unequal in different substances. In obedience to the laws of chemical affinity and definite proportions, among the elementary particles of matter, is to be traced much of the beauty and endless variety of the material world!

As a familiar illustration of *combination*, take spirit and water, which readily unite on being mixed, forming one homogeneous liquid. Sugar and salt also combine with water. A small piece of iron hoop immersed in diluted sulphuric acid, causes an intense chemical action to ensue; the iron disappears—its particles, uniting with those of acid and oxygen, forming a greenish liquid—the hydrogen (the other element of the water) being disengaged in the form of gas. As an instance of *decomposition*, take a piece of limestone and expose it to the heat of a furnace, *carbonic acid gas*—an invisible air, consisting of two elements (carbon and oxygen)—will be driven off, and *quick-lime*—a compound of oxygen and calcium—will remain.

The decomposition of a body consists in the separation of its elements, either by the action of heat and the other inponderable agents, or the application of chemical tests, for which the elements of the compound have a stronger affinity than for each other. This process is denominated *analysis*, or the separating of a compound into its original constituents. The reconstruction of the compound, by causing its separated elements to combine again, is termed *synthesis*; that is, putting

together. These two processes comprehend the whole of inorganic chemistry.

Hitherto, we have considered matter as subjected merely to the laws of chemical action; but this arrangement would exclude many of the most interesting objects of the farmer's care and investigation. His pursuits lead him beyond the mere inert soil which he tills, or the manures he may apply, to the consideration of living beings possessing higher and more complicated forms, and under the control of a distinct system of laws. These bring us at once within the dominion of *life*, and present us with totally distinct classes of matter. A stone, or a piece of earth, possesses no apparatus or organs for supporting its existence or increasing its bulk; it is a dead, inert mass, and it is hence denominated an *inorganic* substance. A plant or an animal is likewise matter, but differing most widely from the stone in possessing a regular organisation, by which it can assimilate food for building up its own structure, and is endowed with the power of reproducing its own species. Plants and animals, therefore, are denominated *organic* beings, endowed with the principle of life.

“Of the laws which produce the condition to which we apply the term *Life*, we know nothing but from certain phenomena which the living body presents. The essential cause is amongst those ultimate truths which human reason cannot reach. No approach has been made to solve the mystery of *Life*; and at this hour we are as ignorant of the cause of life, and of the agency which connects the powers of mind and the mechanism of the body, as at the first dawning of human inquiry.”

Although the organic and inorganic departments of nature admit of a very clear distinction, yet there exists between them an intimate and beautiful connection. For instance, the plant is enabled by its peculiar organization, to extract its food from the dead earth and surrounding atmosphere: from these two sources alone it derives the materials which it works up, under the influence of the vital force, into its own structure. The animal is immediately dependent upon the plant for the means of its support, not having, like the plant, the power of obtaining nourishment directly from the mineral. We can here perceive a few links in that great chain of mutual dependence which harmoniously binds together the multitudinous works of the Creator.

The properties imparted to organic bodies by the agency of life, are of a most singularly striking kind. For example, as soon as the vital principle becomes extinct, the body is placed under the laws of common matter, and decomposition, which subverts the union of its particles, at once commences. It is therefore the possession of the vital force only that enables the animal or plant to control the naturally powerful agents of decomposition by

which it is constantly surrounded. One of the principal of these agents is heat; and it may be interesting to state a few instances as illustrations. Animals, when alive, have the power of resisting a degree of heat which in a dead state would absolutely roast them. Some French philosophers, a number of years ago, placed themselves in an oven, heated to the ordinary degree for baking bread, for a sufficient time to enable the roasting of a joint of meat to commence, without suffering any fatal consequence. Persons frequently labour in factories, mines, and within the torrid zone in the open air, under a degree of heat far exceeding the natural temperature of the blood, without having that temperature sensibly affected; and this is done even without any seeming injury to health, or any other inconvenience than a continued and copious perspiration.

On the other hand, we find that the vital power of animals enables them to endure excessive cold, without materially injuring their health. Whenever the temperature of the air falls below the freezing point, and water and several other fluids are converted into solids, the blood of living bodies does not cease to flow, the animal fluids being removed beyond the ordinary laws of matter by the hidden agency of life. Arctic travellers have proved that in a temperature below the freezing point of mercury, animal heat suffers no sensible diminution, and human beings can perform their accustomed duties. So exceedingly tenacious is the vital principle in some of the lower kinds of animals—such as fish, for instance—that a large portion of their fluids may be actually frozen, and yet their activity may afterwards be restored by the application of warmth. There are, however, many animals to which an excessively low temperature is wholly unsuited, and even destructive. Nature, in such instances, provides an efficient remedy. In cold latitudes, all such animals either migrate or hibernate during the rigours of winter. In the latter case, the torpor of the creature may be likened unto death, yet the circulation does not wholly cease—the vital principle is dormant, not extinct, since the genial temperature of returning spring awakens these sleepers to renewed activity and their wonted enjoyments.

There is a substance secreted in the stomach of the living animal, possessing a prodigious solvent power—the gastric juice. This fluid readily dissolves meat and all kinds of food, yet it never acts upon the living organs with which it comes in contact—so powerfully does the vital force resist the strongest agents of decomposition. Even the vegetable kingdom is not an exception. The hardy trees of our forests resist the intensest cold of our Canadian winters, without having, under ordinary circumstances, their vitality affected. The astonishing vitality of some kinds of seeds is a fact well known. Seeds buried in the earth for count-

less ages, and placed beyond the reach of light and air, have preserved unimpaired the vital principle; for no sooner are they disinterred, and exposed to the influences of air and moisture, than vegetation at once commences.

“Death, as well as life, is a law of nature; and life, with all its powers, is but the gift of a season. The organized fabric, so marvellously formed, contains within itself the germs of decay. The circulating fluids become more thick, the texture more rigid, and the vital organs less fitted to perform their functions. The balance is lost between the waste of the system and the means of supplying its parts with nourishment; and thus, independently of all external injury, the time arrives when the mechanism of the body can no longer work with the vigour required to maintain the animal functions.” The body, when deprived of the vital force, becomes at once subjected to those chemical agents by which it had been constantly surrounded, and which are now enabled to effect its entire decomposition. This marvellous change sooner or later awaits every living thing. Man himself, having been originally formed out of the dust of the ground, when the Creator “breathed into him the breath of life,” yields up at last his spirit to Him who gave it, and mingles his ashes with common earth!

We have extended these remarks beyond what we intended at the outset. If, however, any of our readers should be induced thereby to regard with a higher interest the works and laws of an omnipotent Creator, and thus bring their minds more in harmony with His will, our seeming digression will not have been without its use. The future papers in this series will embrace, 1st, the Composition of Soils, with their improvement and management; 2nd, the Composition of Plants and Animals; 3rd, the Composition of Manures.

## ON THE DOMESTICATED ANIMALS OF THE FARM.

NO. II.

The question as to the origin of species, and the progressive development of organic life on the surface of our planet, is one by far too extensive and complicated for us to discuss within our necessarily restricted limits. Nor indeed is it at all necessary that we should, so far as any really useful or practical purpose is concerned. It would appear from the fossil remains, both of plants and animals, imbedded in the various rock formations of the earth's crust, that a most astonishing series of changes has been going on since the original creation of the world, not only in reference to the distribution of heat, land, and water, but also of vegetable and animal tribes that have been successively called into existence. Not only have species, but entire genera of organic beings ceased to exist,

and new forms created adapted to the altered physical conditions of the earth. That these conditions have been very various, and not absolutely stationary for any considerable periods of time, it is impossible to doubt. And that animals suited to these varying conditions should be called into being by creative power, is a principle perfectly reasonable and consonant with our highest conceptions of the divine perfections. The natural history of the earth reveals a constant series of alternate decay and renovation—of destruction and reproduction, not taking place by chance, but in obedience to law, and that law being the mode in which the power and wisdom of the Creator have been manifested.

However the origin and distribution of species may be accounted for, a subject that would lead us into a wide field of speculation, there is, as Professor Low observes, "a class of changes in organic forms which fall more within our cognizance, and which merit our attention in an especial degree; this is the class of changes which produce what are called *Varieties* or *Races*." Man, as well as the lower tribes of animals, is subject to the influences of temperature, food, habitudes and other agencies that tend greatly to modify his form, colour and general condition. And notwithstanding the many and great differences observable among the various tribes of the human race, there is no sufficient reason to conclude against their having descended from a common parent, and dispersed abroad in the earth from one centre. They form in fact but one species, possessing certain characters in common, and endowed with the power belonging to all other species, that of perpetuating their race.

It has been already stated that different circumstances, such as climate, the physical conformation of a country, the means of obtaining food, temperature, &c., produce very great changes on the forms and habits of animals of the same species. But it is in the domesticated state more particularly that these differences are fully brought out. "The wild hog of the forest, which extends over the greater part of the old continent, is the undoubted progenitor of the common domesticated breeds. When this powerful and solitary creature is subjected to domestication, we find not only his form, but all his habits change. He may be said in fact, to become a new species; and he transmits all his acquired characters to his descendants." In fact, what are considered the most permanent conformations, by which not only species but even genera are distinguished, undergo changes according to the varying physical conditions in which he is placed. The wild hog has six incisor teeth in each jaw, but the effect of domestication is usually to reduce that number one half. Other portions of the body, as the vertebrae, undergo corresponding changes, so that he differs as much, and in

some respects even more from the wild hog of the forest, from which he originally descended, than do many animals, regarded as distinct species, differ from one another.

The ox and the sheep, among ruminating animals, are to the farmer the most valuable and important, and they are subject to changes in habits, form and constitution, by the kind and quantity of food with which they are supplied, and the physical conditions in which they are placed. "With increased supplies of food (observes Professor Low), the abdominal viscera become enlarged, and other parts partake of corresponding modifications of form. To suit the increased size of the stomach and intestinal canal, the trunk becomes larger in all its dimensions; the respiratory organs adapt themselves to the increased dimensions of the alimentary canal, which is indicated to the eye by a change in the form of the chest; the limbs become shorter and farther apart, and the body being nearer the ground, the neck becomes more short; various muscles, from disuse, diminish in size, and the tendency to obesity increases. With the form of the animals, their power of active motion diminishes, and they acquire habits adapted to their changed condition. These new characters they communicate to their progeny; and thus races differing from those which, in the state of nature, would exist, are produced."

The same holds good with regard to birds, several of which, when subjected to domestication, change not only their form and habits, but in a considerable degree their original instincts. The wild goose inhabits the low marshy situations of high northern latitudes, and on the approach of winter visits more genial climates, in large numbers; frequently flying at a great height, and evincing immense power of wing. "When the eggs of this species are obtained, and the young are supplied with food in unlimited quantity, the result is remarkable. The intestines, and with them the abdomen, become so much enlarged, that the animal nearly loses the power of flight, and the powerful muscles that enable him, when in the wild state, to take such flights, become feeble from disuse, and his long wings are rendered unserviceable. The beautiful bird that outstripped the flight of the eagle, is now a captive without a chain. A child will guide him to his resting-place with a wand, and he is unable to raise himself by flight above the walls of the yard that confines him; and he gives birth to a race of creatures as helpless and removed from their natural condition as he himself had become."

The wild duck affords another example of the great changes effected in the form and habits of animals by altered physical conditions. This wary bird, like the goose, migrates in immense flocks to warmer latitudes. "If its eggs be taken, and the young be supplied with food in the manner usual

in the domestic state, the animals will have changed the form, habits, and instincts of their race. Like the goose, they lose the power of flight, by the increased size of their abdomen, and the diminished power of their pectoral muscles; and other parts of their body are altered to suit this conformation. All their habits change; they lose the caution and sense of danger which, in their native state, they possessed. The male no longer retires with a single female to breed, but becomes polygamous, and his progeny lose the power and the will to regain the freedom of their race. The swan, the noblest of all the water-fowls, becomes chained, as it were, to lakes and ponds, by the mere change of his natural form."

The common poultry of the farm-yard have undergone great changes in form and habits by domestication. In a state of nature they possess considerable power of flight, and perch among the elevated branches of trees, an instinct which domestication does not wholly subdue, as fowls invariably prefer roosting on objects above the surface of the ground, although it is difficult for them to attain even a moderate height. This is occasioned by the increase of their abdominal viscera, and the posterior enlargement of their bodies. The breast becoming wider, and the neck shorter, the wings are unable to bear the increased weight of their bodies, so that they almost lose the power of flight, and become so entirely changed, both in conformation and habits, as to render it difficult to say from what specific stock they have been derived.

Temperature is an agent of great power in modifying the forms and habits of animals. The covering of quadrupeds consists of hair, with an undergrowth of wool or down mixed with it. In warm countries the latter is scarcely at all developed, and the animal is thinly covered with long hairs. In countries possessing an extreme climate the covering of animals undergoes great seasonal changes;—the downy matter or fur increases as the rigour of winter advances, thus serving as a protection against extreme cold. The sheep is an animal which seems peculiarly to belong to temperate regions, where it produces a thick, heavy fleece; whereas, in hot countries, it produces scarcely any wool, and in rigorous climates the wool is not only of a coarse texture but is intermixed with long hair. The covering of animals acts as a non-conductor of heat, and powerfully assists the respiratory and digestive organs in maintaining, under all the changes of climate, the natural temperature of the body. It is said, that dogs, taken from a cold to a warm country, frequently lose not only their fur but their hair also, and become as naked as the skin of the elephant.

We will draw this article to a close in the words of the author to whom we are greatly indebted for the materials of this series of papers. "Sim-

ilar to the effects of temperature is that of humidity, the hair becoming longer and more oily in the moister countries. Even within the limits of the Islands, the ox of the western coasts, exposed to the humid vapours of the Atlantic, has longer hair than the ox of the eastern districts. Even the effect of continued exposure to winds and storms may modify parts of the animal form. There are certain breeds of gallinaceous fowls which are destitute of the rump, so called. Most of the common fowls of the Isle of Arran, on the coast of Scotland, have this peculiarity. This little island consists of high hills, on which scarcely a bush exists to shelter the animals which inhabit it from the continued gales of the Atlantic. The feathers of a long tail might incommode the animals, and therefore we may suppose they disappear; and were peacocks to be reared under similar circumstances, it is probable that, in the course of successive generations, they would lose the beautiful appendage which they bring from their native jungles.

"The effects, likewise, of altitude are to be numbered amongst those which modify the characters of animals. In general, the animals of mountains are smaller and more agile than those of the same species inhabiting plains. In man, the pulse increases in frequency as he ascends into the atmosphere, so that, while at the level of the sea the number of beats is 70 in a minute, at the height of 4000 feet the number exceeds 100. The air being rarer, a greater quantity of it must be drawn into the lungs to afford the oxygen necessary to carry off the excess of carbon in the system. But gradually, as man and other animals become naturalized in an elevated country, the digestive and respiratory organs, and with these the capacity of the chest and abdomen, become suited to their new relations. Humboldt remarks on the extraordinary development of the chest in the inhabitants of the Andes, producing even deformity; and he justly observes, that this is a consequence of the rarity of the air, which demands an extension of the lungs.

"The effects of use or exercise, in modifying certain parts of the animal form, have been referred to. The limbs of many animals inured or compelled to speed become extended in length, as of the dogs employed in the chase of the swifter animals. The limbs of an animal deprived of the means of motion become feeble and small, as the wings of domesticated birds. In the natural state, the cow has a small udder, yet sufficient to contain the milk which her young requires; in the domesticated state, by milking her, the organ becomes enlarged, so as to contain a quantity of milk beyond what she wants of her own offspring demand. Nor are the characters thus acquired confined to the individuals on which they have been impressed, but may be transmitted to their

posterity. Some of the wild horsemen of the plains of South America are, from infancy, continually on horseback, and their limbs are observed to become slender and almost unfit for walking, which characters reappear in the children of the tribe. Amongst the causes, then, which tend to form varieties, are to be numbered the habitudes of animals, whether in the wild or domesticated state."

### HOME DISTRICT AGRICULTURAL SOCIETY.

This society held its annual meeting for the election of officers, and the transaction of other business, on the 14th of February, at the Court House, in this city. E. W. Thomson, Esq., was re-elected President, and W. B. Jarvis, T. Neal, and W. B. Baldwin, Esquires, Vice-Presidents, G. D. Wells, Secretary, and W. B. Crew, Assistant Secretary; Wm. Atkinson was chosen Treasurer, and the following gentlemen, Directors for 1849: Geo. Buckland, Alexander Shaw, Jacob Snider, John Watson, Jonathan Scott, J. P. Wheeler, Nat. Davis, D. Smellie, F. Jackes, R. McNair, J. H. Price, E. Snider, and Dr. Clarke.

The following is an extract from the report presented by the retiring officers, and as it contains an important suggestion, we publish it, in order that our readers (especially in the Home District) may have an opportunity of expressing their opinions on the propriety of its adoption. Our own opinion is, that if the District Society were to hold its meetings at different places in the district, much greater good would be accomplished than by holding them at one point, the consequence of which is that only those persons in the vicinity attend; the same horses, cattle, &c., compete year after year for the prizes—a general apathy among the farmers obtains, because a few animals take the lead and by this system are allowed to keep it, and thus the very object for which the society is constituted, and individuals and the Government subscribe their money, is lost sight of. Considerable opposition was offered by a few members present, but we think the matter should be brought before the various Township societies (which some of the objectors thought ought to be altogether abolished), and their views and feelings ascertained. The District Society belongs to the district, and not to the people in the neighbourhood of Toronto, who may very naturally wish to have its meetings held, and its money distributed among themselves. We trust a more general interest will be awakened to the objects and operations of these Societies throughout the province, and that the hints thrown out by the Report, on the subject of *moving about*, will be taken up by the Township Societies, and their opinions made known before another

year. The suggestion may apply to other districts as well as the Home District;

"Since the last annual meeting, a considerable accession to the members of this society has been made, but still the number falls lamentably short of what it should be. A very great degree of apathy exists amongst the farmers of the district with respect to uniting their efforts to sustain in active operation the District Society. This may arise in some degree from the number of Township societies in operation. Contrary to the general expectation when the establishment of these societies was advocated, the effect has not been to build up the District Society to the extent that was anticipated. Perhaps this is attributable (and it is to be hoped it is) to the circumstance of their meetings being much more convenient to attend than the meetings of the District Society, which are always held in the city of Toronto, and not to an entire disregard of the important benefits such societies, if properly sustained, are calculated to produce.

In view of this subject, the retiring officers beg to suggest the idea of endeavouring to awaken a more general interest, by holding its meetings in the different sections of the District alternately—say in the most suitable place in each Riding. The advantages of this regulation, it is conceived, are many and important, and it is now suggested for the purpose of bringing the subject under the notice of the leading agriculturists of the district. One necessary preliminary measure is important, in view of such a course being adopted; that is, that the section wherein the spring or fall show is to be held, should forego their township meetings, and throw all their strength into the district meeting for that season.

The officers regret that the attempt to get correct statements of the mode of culture, and the other information sought to be obtained by offering extra high premiums for grain and root crops, have not been fully accomplished. But it is to be hoped, that by a steady perseverance in the plan to obtain satisfactory and useful information, the society may be more successful; and it is therefore suggested, that as little deviation as possible be made from the established regulations of the society on that subject."

A tabular form, for the statement of the several facts which should be furnished by the competitors in grain, roots, &c., is annexed to the report, but as we think it rather imperfect, and unnecessarily inconvenient, we shall not take the trouble to publish it. In all probability, the directors will cause appropriate forms to be printed for public use before next fall, in which case we shall notice them. The Treasurer's account shews that the sum of 141*l.* 11*s.* 7*d.* was deposited by the township societies (nine in number), for the purpose of drawing a portion of the government grant. The sum of 65*l.* 4*s.* 8*d.* was apportioned among them out of the said grant. The whole amount in the treasurer's hands during the year was 453*l.* 15*s.* 10½*d.*, of which he paid in premiums 142*l.* 10*s.*, to the Provincial Association 50*l.*, and the re-

mainder to township societies and for incidental expenses, except a balance on hand of 24*l.* 1*s.* 6*d.*

ADDRESS OF LEWIS F. ALLEN, ESQ.

By the courtesy of B. P. Johnson, Esq., the indefatigable secretary of the New York Agricultural Society, we are favoured with Mr. Allen's valedictory address to the members of that society on his retiring from the office of president. The address was delivered at the Capitol, in the city of Albany, Jan. 18th, 1849, and we have perused it with very great pleasure. It is a sensible, manly production, entirely free from exaggeration or national vanity—blemishes occasionally characteristic of American orators. Mr. Allen evidently understands both the theory and practice of the agricultural art; and of its vital importance to the well-being and prosperity of his country. He traces the rise and progress of agricultural societies and periodicals in the United States—or rather in the State of New York, which has always led the van in these matters—and urges with irresistible force the claims of the agricultural interests on the legislature, and the necessity of adequate provision for agricultural education adapted to the wants of the age. We regret that want of room in our present number prevents us from inserting any lengthened extracts from this interesting document. As, however, the author is so favourably known on this side, he having attended, with others of his countrymen, our two last Provincial Associations, and the important society which he represents having given tangible proofs of its sympathy with our proceedings, we shall take an early opportunity of letting Mr. Allen speak for himself, through the medium of our pages, on some of the more important topics discussed in his address, that possess a common interest. For the present, the following condensed statement of some interesting historical facts must suffice.

It appears that in 1819 the legislature of the State of New York granted \$10,000 per annum for a term of four years for the promotion of agriculture, which had the effect of bringing into existence several county societies, and of stimulating individual exertion. An agricultural paper was also commenced in Albany, called the "*Plough Boy*;" and three volumes of "*Memoirs of the Board of Agriculture*" were published. Several importations of cattle were made from England, which laid the foundation of the present improved breeds. A season of apathy, however, ensued, the "*Plough Boy*" got engulfed in politics and died. In 1828, a monthly journal was commenced in the city of New York, entitled the "*New York Farmer*," but its circulation appears to have been very limited. The "*Genesee Farmer*" was commenced in 1831—first a weekly, afterwards a monthly publication, and it continues, as many of our readers are aware, a most valuable and popular journal. The New York State Agricultural Society was originally formed in 1832, and was sustained for several years solely by private patronage. An attempt was made in 1833 for legislative aid, but in vain. The society, however, held a show in October of that year at Albany, and a creditable exhibition of live stock,

farm produce and implements was collected; but, for want of funds, no premiums were awarded. In 1834 the society commenced the publication of a paper in Albany, called the "*Cultivator*," with the celebrated Jesse Buel as its conductor. This work, our readers need not to be informed, maintains its high character to the present day. A fresh impulse was now given to the cause of agricultural improvement. It was not, however, till 1841 that agriculture again received the patronage of the legislature; in that year \$8,000 per annum were voted for five years. The state society was reorganized to meet the provisions of the new law, and in Sept. of that year a cattle show and fair was held at Syracuse, which, although but an experiment, sufficiently attested the disposition and capability of the farmers of New York to sustain the important cause in which they were now fairly engaged. With what effect they have done so, after a trial of seven years, those of our readers who attended the State Fair at Buffalo last fall will well understand. The valuable and voluminous reports of the Society form an enduring record of its high character and usefulness. And in expressing our wish for its continued prosperity, we would accompany it with an earnest desire that Canada may profit by the example. In reference to the important subject of legislative grants, for the encouragement of agriculture, and other industrial arts, Mr. Allen gives his unequivocal testimony in the following words:—

"Encouraged by that beneficent law, agricultural societies were constituted in a large majority of the counties of the State during that year, which have since been maintained with increasing zeal and benefit. The law making appropriations for this object has been renewed to the present time; and he must be a hardy legislator, who can now raise a voice of potency against its continuance, so deeply grounded are its healthful influences in the affections of our people. An act pregnant with greater good to the prosperity of the State, next to establishing the foundations of social order, and domestic security, never has emanated from your legislature; and long, long, and with increasing bounty, may it continue."

"THE AGRICULTURIST."

We embrace the earliest opportunity of returning our grateful thanks to a number of friends who have expressed their approval, and warm interest in the success, of our publication. We have received assurances from individuals of all shades of politics of their confidence in the sincerity of our professions—that *our journal shall not be made a party organ*. We have reason to believe after what has transpired, that the recent rash and most unjustifiable attempt of a contemporary to fix upon us a political character will not materially if at all injure the circulation of our paper. The subjoined letter of a correspondent holding, we believe, *conservative* opinions, may be regarded as a sample of the numerous assurances we have received from *both* political parties in reference to our professed *neutral* character.

We beg also to state for the information of those at a distance who seem to have confounded our publication with an opposition paper recently commenced in this city, that we have no connection whatever with Messrs. Eastwood & Edmundson.—The public may judge for themselves which of the two publications is most deserving support. All we ask is a *fair comparison*, leaving out of consideration some peculiar circumstances we might urge on the ground of equity and fair dealing.—We could get up a paper for a quarter of a dollar less per annum, on the hitherto recognised principle;—“*It will do for Canada.*” But we beg to assure our readers that it is our ambition to present them with a paper that shall in point of mechanical and literary execution be commensurate with the increasing demands of this growing country; a paper that shall obtain a respectful hearing at Home, and that will bear a favorable comparison with the similar productions of our enterprising neighbours on the other side. We shall have our arrangements completed by the early part of summer for receiving regularly the voluminous Reports and Transactions of the three great National Societies of Agriculture, in England, Scotland, and Ireland.

In a word, we are determined to spare no reasonable amount of labour or expense in making “*The Canadian Agriculturist*” useful and creditable to our rising country. We ask that country to aid us—not on the ground of charity, nor indeed as a mere private speculation,—but on the broad, enduring basis of *national utility*.

*Denison Terrace, Toronto,  
January 27, 1849.*

To the Editors of the Agriculturist.

GENTLEMEN—In acknowledging the receipt of the first number of your invaluable paper for 1849, allow me to wish you every success, and that you may find it remunerative to yourselves, to disseminate useful information in all the rural districts of the province. Allow me also to enclose my subscription for this year. What did the agriculturists of Canada think of their profession before we had agricultural papers and societies? I recollect well, when a boy, (and that is not so long since), that a man would be thought wild if he spoke of thrashing, reaping, mowing or sowing machines; and poor, too, if he began thrashing wheat before Christmas. And we were content to rake our hay, barley, &c., with hand-rakes, which then cost 2s. 6d. each, precious articles; and I know an old friend that will have nothing else, although on an old and large farm, to this day; but he does not take an agricultural paper. As for ploughs, we had only the old-fashioned wooden mould-board covered with sheet iron, or the short Yankee plough, of which they boast. I have ploughed many a day with them; but give me the improved Scotch-English ploughs, such as are made by Bell of Toronto. By the way, I hope the trial of ploughs and ploughmen between the Americans and us will not be lost sight of. We can thrash them, if they use their short bull plough, I guess.

I find the *Colonist* condemns your paper for having taken part in politics, and it would serve you right, if you had done so. I have always taken the paper, and do not recollect it, so I think it cannot be anything very flagrant. Now I would not wish you by any means to dabble in politics, but leave it to the *Colonist*; still I think you might stir up the farmers to look more after their interests than they do; and the best way they can accomplish it is, to send fewer lawyers to parliament—(excuse me, gentlemen, I know one of you belongs to the black profession; but your knowledge of, and interest in, our profession is very different from that of some of these gentlemen).

It is our privilege—it is our duty—and it is in our power to have our interests represented by farmers, and we must do it; but heretofore I fear we have thought more of our party than our pockets. Let any man of sense cast his eye about him (unless he happens to be in a lawyer's office), and say whether or not this should be an agricultural country? Look at the climate, the soil, the extent and value of its natural and navigable advantages; in fact everything is in favour of agriculture. To be sure, we are young and delicate yet, and require some protection from our parent state, and have good reason to expect it; but do we get it? And who have we to look after it for us, if we do not ourselves; we must follow the fashion and look out for number one.

Your obedient Servant,

RICHARD L. DENISON.

To the Editors of the Canadian Agriculturist.

SIRS.—Should the following remarks, the result of three years' experience, be considered by you as worthy of a place in your journal, I will be obliged by your inserting them, hoping that some one may be benefitted by them.

In the spring of 1845, being my first year in Canada, I went on a rented farm, in the township of Whitechurch, on which there were three acres of fall wheat, which when harvest came I found to be very much injured by the rust. The wheat grew on dry ground, and had been early sown, and otherwise well laboured. It was fallow the first time broken up, and had received a dressing of farm-yard manure.

Not having seen anything of this disease in the part of Ireland where I came from, I was led, from the loss which I had sustained, to inquire into the matter (and here I may remark, that as lime was very plentiful with us, we were in the practice of using it very largely, every five or seven years); and the conclusion to which I came was, that the ground on which this wheat grew contained an excess of vegetable matter; and on applying some chemical tests, I found a total absence of lime, therefore I reasoned that the excess of vegetable matter in the soil, caused a softness in the external coat of the straw, which under certain peculiar circumstances of the atmosphere, allowed the sap of the plant to exude through the pores of the stem—thus the nourishment which was to have gone to form the kernel of the wheat was drained from the ear, and the sap escaping, allowed the seeds of a tribe of fungus, which are floating about in the atmosphere, to take root upon the plant, and which fungus is neither more nor less than rust.

To endeavour to prevent this disease in my wheat crop the ensuing season, and to do so with as little outlay of money as possible, I took occasion every time I went to Toronto with the waggon, to bring back a load of lime from the gas works; this I got at about half the price I would have paid for it at the lime kilns. I kept it dry until I was going to use it, and applied about forty bushels to the acre on the fallow, harrowing it in with the seed.

Wherever I applied the lime, there was no rust in harvest, but where it was omitted there was very considerable of it.

The lime cost 6d. per bushel, thus the expense was only £1 per acre, the benefit derived was, that where the lime was used, I had thirty bushels of good sound wheat per acre, and where it was not used, I had only eighteen of poor shruuk grain. The account stood thus:—

LIMED ACRE.	
To 30 bushels of wheat, at 4s.....	£6 0 0
To 40 bushels of lime, at 6d. ....	1 0 0
	£5 0 0
UNLIMED ACRE.	
By 18 bushels, at 2s. 3d.....	£2 0 6
Balance in favour of limed acre .....	2 19 6
	£5 0 0

This I repeated the following season, and with a similar result, and I am satisfied that any person adopting the like course will find a similar result.

There is nothing from which the Canadian farmers suffer so much as from rust in their wheat crops, and if by the simple and cheap application of a few loads of lime to every acre of fallow, and at the same time taking care that a free passage be given to carry off the surface water, they can in a great measure remedy this evil, I am certain there is no one will regret having tried it, and when they have once tried it, will continue to do so on every possible occasion.

Your obedient Servant,  
CURTIS McFARLAND.

Toronto, 5th Feb., 1849.

#### AGRICULTURAL ASSOCIATION OF UPPER CANADA.

The annual general meeting of the directors of this important society was held, pursuant to public notice, in the Court House of the city of Toronto, on Wednesday, 21st inst.—Mr. Sheriff Ruttan of Cobourg, the President of the Association, in the chair. Several important matters were disposed of, and arrangements made for conducting the proceedings of the Association for the current year. Among these, we may mention the appointment of the following gentlemen as a sub-committee of management at Kingston, where the next show will be held in September.

J. B. MARKS, Esq., Vice-President of the Association.  
ANGUS CAMERON, Esq., Chairman of the Wolfe Island Agricultural Society.

PETER DAVY, Esq., Chairman of the Ernestown Agricultural Society.

HENRY SMITH, Esq., M.P.P. for Frontenac.

DR. BARKER,

WM. FERGUSON, Esq., Chairman of the Pittsburg Agricultural Society, and Treasurer of the Midland District—*Treasurer*.

G. A. CUMING, Esq., Treasurer of the Pittsburg Agricultural Society—*Secretary*.

The Hon. Adam Fergusson being present, and on his way to Montreal, was requested, in conjunction with J. Wetenhall, Esq., M.P.P., to urge upon the Government, the justice and expediency of allowing a liberal grant of money, to enable the Association to discharge all its outstanding liabilities.—It was also resolved, that the President address a circular to the agricultural societies of the different districts, urging upon them the importance of contributing to the funds of the Provincial Association. A vote of thanks was passed to the late executive committee at Cobourg, for the very liberal and successful manner in which they sustained the last exhibition of the society in that town. It was likewise determined, that the Secretary, Mr. Buckland, be instructed to draw up a concise report of the origin and progress of the Association; and that the directors take such means as will soon enable the Financial Committee to meet all the demands against the society. A few individuals in the Huron District have set a praiseworthy example, by subscribing liberally toward that object; and we trust many others will be induced to do the same. £500 are required to place the Association in a healthy condition. The directors adjourned the meeting to the first Wednesday in May, to be then held in the city of Kingston.

We copy the following practical directions from that excellent periodical, *The American Agriculturist*, only premising that what is intended for the Northern and Western States during February, will not be altogether unseasonable for Canada, in March.

*Fencing Stuff, Gates, &c.*—If not already done, cut and haul all the fencing stuff you require, mortice and shape the posts, split and point the rails, in readiness to put up as soon as the season will admit. See that substantial gates are made and properly hung at the entrance of every field or yard on your farm. Cut and pile your summer fuel, if not done before.

*Repair of Buildings.*—Carefully examine your barns, stables, and other out-buildings as well as your own dwelling, and see that all necessary repairs are promptly made. Cover them, if necessary, with Mr. Boyle's "cheap paint," as detailed at p. 225 of our seventh volume; or perhaps, what would be better still, the "American Indestructible Mineral Paint," described at p. 11, of the present volume. If either of these is not sufficiently economical, a coat of good whitewash may be put on instead.

*Tools, Implements, &c.*—Thoroughly overhaul all the implements, tools, and machines on your farm, and put them in good repair, discarding all bad ones, and supplying their places with those that are of the best quality and new.

*Maple Sugar.*—Prepare for making maple sugar, which should be commenced the latter part of this month, or early in March. See that your sap buckets or troughs are tight and clean, and if you have not enough for the work you have to perform, supply the deficiency by new ones. Put your boilers in order, and arrange them in a manner that will economize in fuel. In tapping your trees, do not make the holes too large nor too deep; neither is it best to tap the trees very far from the roots. Yet the higher the holes are bored above the ground, the more saccharine the juice, and the shorter-lived the trees.

*Dressing Flax and Hemp.*—If you have flax or hemp to break and dress, it should be done this month, for in March you will have plenty of other work to do.

*Care and Management of Stock.*—Continue well to look after your stock. This and the next following are the trying months for animals, and if well carried through these, you may safely trust them afterwards. Those accustomed to green food a great part of the year, and now kept upon that which is dry, should have their condition carefully observed. Roots should be provided, more or less, as a change; such as potatoes, turnips, ruta-bagas, mangel wurtzel, beets, carrots, parsnips, &c. Chaff, with corn-cob and Indian meal, may also occasionally be given. Do not allow them to take their drink too cold nor when over-heated with exercise or work. Let them also be carded, brushed, curried or wiped down with straw, at least once in twenty-four hours. Working animals should invariably have grain, which may be given with chopped hay, or otherwise, and should be fed and watered at regular hours, three times a day. All pregnant animals should have a dry, warm shelter, but should not be made too fat. If near their time, they should be allowed to remain loose, unmolested, in separate stalls, or pens, and should be aided, when necessary, in giving birth to their young. Swine should have constant access to water, sulphur, salt, charcoal, and wood ashes, in order to thrive. Breeding in-and-in should not be practised beyond two or three generations, unless the families from which the males and females have descended are very distantly related.

*Poultry.*—Provide your hens with warm, comfortable houses and convenient poles to roost upon; and if you wish them to lay well, keep their apartments and nests clean. Allow them to have constantly before them plenty of gravel, broken clam or oyster shells, as well as a heap of wood or coal ashes, brick dust, and finely-pounded old mortar, or lime, to pulverize, or dust themselves in. Give them water, boiled mashed potatoes, mixed with Indian meal, and a little fresh meat of some kind, finely chopped; also grain and the tender refuse leaves of celery, cabbage, &c., and there will be no want of eggs. Turkeys, ducks and geese should be provided with suitable shelters and pens for laying. They should be daily fed with mashed potatoes, chopped turnips, or cabbage leaves, mixed with In-

dian meal, and every few days with a small quantity of oats, buckwheat, or Indian corn.

*Manures.*—Take proper care of your stable manure, and see that it is not thrown out of a "hole in the wall," there to lie, and mix with snow, as well as to have all the virtue washed out of it, not only by the rain, but by the drippings of the roof. Erect some kind of a shed over your manure heaps, if it is nothing more than a rude covering made of posts set in the ground, with a roof formed of poles, slabs, thatched with spruce boughs or straw. If you have marl, or muck, in your vicinity, that can be dug at this season without exposure to wet, cart or sled it into your yard, or fields, in order that it may be tempered by the genial influences of the frost.

*WIRE WORM.*—A successful farmer in this vicinity, Mr. D. D. T. MOORE, states that he has tried various substances for preventing the ravages of the wire worm, none of which, excepting sulphur, proved of any use. An Irishman told him that sulphur had been used with advantage in Ireland. Before planting his corn, Mr. M. wet it and rolled it in flour of sulphur, and afterwards coated it in plaster to prevent the sulphur from wasting. He saved a crop by this means, where he had failed for three years before. We see no reason why the sulphur might not be equally effective for any other grain.—*Cultivator.*

*ADVICE IN POULTRY KEEPING.*—The principles upon which I rely for success in keeping hens, are, first to have two breeds—a few to hatch and rear the chickens, and twice the number of everlasting layers, as eggs are more profitable than chickens; second, to get a hatch as early as possible in spring, and to keep them well; these never cast their feathers like the old birds, and if they begin to lay in autumn, lay more or less all winter; third, never to keep old fowls, (none but favorite fowls ought to be kept more than two years;) old birds lay larger eggs than pullets, but not nearly so many; fourth, to give them the best barley I could get, and as much as they could pick up, not only a day in summer, and twice in winter; they are, once a day more profitable, well kept, but eggs are better. The two breeds I like best are the spotted Dorkings for sitting, and the pheasant breed for laying.—*Agric. Gaz.*

*CONNECTION BETWEEN GARDENING & FARMING.*—Sir Robert Kane, in an able pamphlet which all who are interested in Ireland should read, has endeavoured to show that the only mode of escape from the evils which belong only to that country, consists in covering the land with small farms. We will not presume to offer an opinion upon the justness of this view, which is that of a man of acknowledged talent, who has devoted himself for a long time to the study of the social condition of the country. As an Irishman and a Roman Catholic, he must be presumed to understand it, certainly demands a respectful hearing; and whether all his opinions meet approval or not, he must at least be supposed to express the truth to a great extent.

If Sir Robert Kane is right, the most urgent want of Ireland is a system of small farms. But he is met on the threshold by this difficulty, that the great mass of his countrymen do not understand the art of cultivation, and are incapable of turning to the necessary profit such land as they may occupy. Hence it was that Lord Clarendon's plan of Practical Instructors met with an amount of success which Englishmen could not comprehend; and hence also the readiness with which it received pecuniary assistance from the most intelligent part of the Irish population, including 10 local farming societies, each of which subscribed its 25l.

Yet this is but an imperfect system, and one which

can only effect a small amount of good. To tell a man how to do a thing is something; but to get him to do it, to support him under his inevitable failures, to cheer him on to renewed exertion, and finally to give him habits which in time become so fixed that their origin is forgotten, this can only be done by the well directed exertions of great numbers of associations, conducted by men who not only have no personal interests to serve, but who are willing to make personal sacrifices in working out the ends which they believe to be beneficial to the public. It is only when the dictates of science have so long fallen into a mere routine, that the science is lost sight of, as it is in England, that the mass of the rural population will acquire the character of skilful cultivators.

One of the most powerful of all agents in teaching agriculture to a nation of small farmers, is a central Society of Horticulture, provided it is established on sound principles, and conducted in their spirit. Horticulture is the parent of Agriculture. Gardens existed before farms. Gardening is in truth but farming on a small scale, and *vice versa*. It is in the garden that the minute facts necessary to successful cultivation can be best examined and understood; it is there that the causes of failure or success can be best investigated, and that are tried accidentally or intentionally, those small experiments which lead to the more important experiments in fields. The best of all little farmers are experienced gardeners; the best of all agricultural instructors are intelligent gardeners.

In a garden, the advantage of digging, over scratching the ground, as is now done in wild countries, was ascertained; the plough was then invented to do the same work in the fields. The gardener finds that deep digging is far better than shallow; and then come improvements in the mechanical power of the plough. The gardener finds that his crops are late, or unhealthy or unproductive, in cold, wet land—that his fruit trees canker, his grapes shrivel, and his flowers run all to leaf; he cuts drains and removes the water, restores health and fruitfulness to his crops, and finds that frost is no longer so great an enemy; this is the prelude to agricultural draining. The gardener finds that weeds ruin his vegetables, and he therefore keeps his land clean; his vegetables are no longer ruined, and the farmer follows his example. The gardener learns that his finest crops are obtained by planting widely; years of experience under all circumstances, render this indisputable; and at last the farmer bethinks him that what does in the garden should also do in the field, and thin sowing is the result. In short, it would be difficult to show any one move in the art of cultivation in the field, which has not derived its origin from the garden.

Some persons indeed think that the man who can grow cabbages is by no means able to grow wheat and hay, and that to get the finest celery is no guarantee to the success of a crop of turnips. They are unable to perceive any connection whatever between agriculture and the labours of the florist who grows Auriculas and Picotees, or the high cultivation of the rich man's gardener, who rears his plants in glass-houses with an artificial climate. That there should be a connection between the refined skill which produces the gorgeous Epiphytes in the hothouses of the Duke of Devonshire, and the rough labour of John Coonan's Potato field in Cork street, Dublin, is a thing incredible.

And yet the difference is of the same nature as that which would be found between the grooms who tend the racing stud in Lord Fitzwilliam's stables, and the rude peasant who feeds a stumbling cart-horse with furze from a Welsh common. The groom could manage the cart-horse and bring him into condition, but the peasant could do nothing with the thorough-bred racer.

It is for this reason that Horticultural Societies may be of so much importance; they are or should be cen-

tres from which spreads a knowledge of the art of cultivation; but they are or should be much more; they should be the high schools of principles, either in themselves or in the encouragement which they afford to art, and the support which they thus extend to the prosecution of principles. It is true that this is generally and of necessity done indirectly, but it is not less done or the worse done on that account. A prize is offered for a cabbage; a solitary competitor appears and produces a cabbage, but much inferior to what was hoped for; nevertheless he receives the reward of his exertion. A stander-by says, "Why, I could have done better than that myself!" and he, too, becomes a competitor on the next occasion. Emulation having been excited, we now have two or three competitors, but still their cabbages are poor affairs; nevertheless, they receive their prizes A is No. 1, B No. 2, and C No. 3. But C means to be No. 1, and now applies himself in earnest; he examines, he inquires, he exerts his skill to win, and after a year's care, and we will even say study, he succeeds. He has only produced a cabbage, it is true; but it is a much better one than he could have produced before he set about trying for a prize—he will never again be able to grow cabbages ill, and what is more, he will in future grow every other thing better. Thus a step is gained; the snowball begins to roll, and we all know what happens then, if there be but snow on which to revolve. Experience tells us that human nature will always produce enough of the food required.—*Gardeners' Chronicle*.

**CHOOSING A HORSE.**—There is much pleasure and profit in the service of a good horse: but very little of either in a bad one. There are many mean horses that make a good appearance when taken from the hands of a jockey. In purchasing a horse then, trust not to the seller's words: let your own judgment or that of a friend, be chiefly relied on. See that he has good fore feet and joints, and that he stands well on his legs. See that his fore teeth shut even; for many horses have the under jaw the shortest: these will grow poor at grass. See that his hair is short and fine, for this denotes a good horse. Observe his eyes that they are clear and free from blemish; that he is not moon-eyed or white-eyed; for such are apt to start in the night. A large hazel colored eye is the best.

Look at his knee; see that the hair or skin is not broke, for this denotes a stumbler. Take care that his wind is good; for a trial of this let him be fed on good hay for twenty-four hours, take him to water and let him drink his fill, placing him with his head the lowest; if then he will breathe free there is no danger. See that his countenance is bright and cheerful; this is an excellent mirror to discover his goodness in. If his nostrils are broad, it is a sign that he is well winded; narrow nostrils the contrary.

See that his spirits are good, but that he is gentle and easily governed; not inclined to start. In travelling mind that he lifts his feet neither too high or too low; that he does not interfere or overreach, and that he carries his hind legs the widest. See that he is well ribbed back, and not high boned. The size may be determined by the purchaser. Age from five to ten is the best. There are many tricks practised by jockies to make horses appear young; all I would say is, that horses' teeth when young, are wide, white and even; the insides of their mouths are fleshy, and their lips hard and firm. On the contrary, the mouth of an old horse is lean above and below; the lips are soft and easily turned up; their teeth grow longer, narrower and of a yellow color.—*Cole's American Veterinarian*.

**BLIND BRIDLES.**—"Yes, use your thinking powers, friends; they were given you to use, and not abuse.—Blind bridles! truly named, surely. Art never in-

vented a more fatal thing to the eyes of horses than when she devised this plan of depriving the horse of what nature intended he should enjoy. But, says one, how are blinders injurious to the horse? Because they gather dirt and heat around the eyes. Dirt irritates the eye, and heat produces inflammation. These bridles so entammel the eyes of the horse that he is compelled to be constantly straining them to see his way. The over exertion of the nerve brings on disease. Eyes were not made in vain. Had they been needless, the Creator would not have located them in the head.—They were placed on the corner of the head that he might have the advantage of looking in different directions. Men, in the abundance of their wisdom, concluded the horse had too much sight, and they wished to curtail it; hence the origin of blind bridles. Think of this seriously, and you will abandon the use of so destructive an appendage. Remember, that blind bridles and diseased eyes are inseparably connected.—Custom hoodwinks the senses of men as much as blind bridles do the vision of horses.”—[J. MADDOCK, FARRIER.]—*lb.*

THE DUKE OF RICHMOND'S SPEECH AT THE SMITHFIELD CATTLE SHOW DINNER.—The “Health of the President” was given by the Earl of Chichester.—The Duke of Richmond returned thanks. He said that, “He hailed with the deepest pleasure the feelings of approbation with which his name always appeared to be received by the great body of tenant farmers of England, with whom he had the honour to be associated. Although he was ever ready to lend a helping hand towards agricultural improvement, and believed that agricultural improvement would be for the benefit of the country generally, he had never stated his opinion that the agricultural interest was the only interest that ought to be considered. He saw no reason why the three interests—the commercial, the agricultural, and the manufacturing, should not be identified. He was happy to remark the rapid strides which, during the last ten or twenty years, the agricultural interest had made towards improvement, mainly owing to the system of drainage which had been adopted by the farmers of this country; and his conviction was that every acre of land should be drained that would pay for draining. He had a few words to say with regard to the monied interest of this country. If he had treble the capital he could now command, he could make more money by it by lending it out for the drainage of land, than the city men did with the course they adopted. If they would lend their money to the farmers of England, they would get good security and a quick return. He was most happy to hear there was an association forming in the metropolis to afford this aid to agriculturists. He had been a short time since in a county not much famed for farming—Lancashire, and he there found that, by means of drainage, stupendous tracts of moorland, which no horse could walk across, had been reclaimed, and were yielding as good crops as were to be found in many parts of Sussex. He had ever felt a deep interest in the agricultural labourer, and, although some of his fellow-landholders might think that he was going too far, he would still say that it was the duty of the tenant farmers to bring every possible piece of land into cultivation, in order to give employment and benefit to the labourer. There was not a gentleman present who would not see to-morrow when he went home, many acres which he must feel satisfied would well repay the outlay upon them for drainage. “One other point, gentlemen,” said his Grace, “before I conclude. No farmer can profitably cultivate land, if his fields are not of a proper size. I will defy any farmer to farm a field of 5-acres, with 8 or 10 drains from an old hedgerow, and more particularly when that old hedgerow contains Ash trees—the

greatest poison to a farm. If you drain you must cut your ash trees. If you neglect to do so, they will check every drain in your field. There are other questions of great importance to the agricultural interest, but I cannot trespass on your attention by touching on them at present. I feel deeply grateful to the Smithfield Club for having appointed me President on the decease of Lord Spencer. I can only say that I have endeavored, as President, to follow exactly the course which I feel, if he had been alive, he would have pursued at every one of our meetings. Gentlemen, I thank you for the compliment you have paid me, and I hope and trust that the Smithfield Cattle Club may long continue.”

BOOK KNOWLEDGE OF FARMERS, DERIDED BY WHOM?—With a man of any reflection and honest care for progress in the arts and employments of useful industry, there are few things more trying to his patience than to hear men, sometimes even gentlemen, who have some pretensions to education, and who therefore ought to know better, denouncing book knowledge as affording any guide in practical husbandry. Now, to all such, and especially to practical men who succeed well in their business, and who have always something useful to impart, as the result of their own personal experience, does it not suffice to say—“I am obliged to you for what you have told me; your integrity assures me that it is true, and your success convinces me that yours is the right rotation, and yours the proper process, since I see that while you gather heavy crops your land is steadily improving; but now, my friend, let me ask you one question further. What you have imparted is calculated to benefit me personally, and unless communicated again by me to others, with me its benefits will rest. Now, suppose, instead of the slow and unsocial process of waiting to be interrogated and making it known, to one by one, as accident may present opportunities, you allow me to have recourse to the *magical power of types*, which will spread the knowledge of your profitable experience, gained by much thought and labor, far and wide throughout the land, that thousands may enjoy the advantages which otherwise I only shall reap from your kind and useful communication. Will not that be more beneficial to society, and is it not a benevolent and a christian duty not to put our lights under a bushel?” Doubtless such a man, if not a misanthropic churl or fool, would say Yes. Yet the moment, by means of types, such knowledge is *committed to paper*, it becomes the (by fools only derided) *book knowledge*.—*Plow, Loom and Anvil.*

AGE OF SHEEP DETERIORATES THEIR WOOL.—It has been observed, by the most experienced wool growers, that the older the sheep the less fine the wool. The wool is said to be of the best quality when the sheep is from two to five years of age—after that it deteriorates.

Mr. Blanchard, of New York, states that he has known flocks that yielded wool that sorted number one when young, when older drop down to number two or three.

Those who wish to grow the first grade of wool, should keep young sheep. Some go so far as not to use a buck after he is four years old.

AGRICULTURE THE LEADING INTEREST.—It is supposed that three-fourths of the population of the country are employed in agriculture; the other quarter being divided among all other employments and professions. Besides, the mechanic, the manufacturer, the merchant and the professional man, are all mainly dependent upon the farmers for patronage and support. When the farmers as a class are prosperous, all the others participate in their prosperity. From this it

follows, that whatever benefits the agricultural class, directly benefits three-fourths of the people, and indirectly benefits the other fourth.

Surely, then, the farmers have a right to demand of government the means to sustain their agricultural societies, and to collect and disseminate important information relative to their calling. Let the light of science and education be brought to the aid of agriculture. Let our resources be developed, and the skill and industry of the husbandman be directed into their proper channels, and results would soon be attained in which not only the farmer would rejoice, but the whole community with him.—*Maine Farmer.*

**ROTARY MOULD BOARD PLOW.**—The Scientific American says, that at the late Fair the most novel agricultural implement was a Revolving Mould Board Plow, the invention of Mr. Page, of Baltimore. The mould was a circular concave shield, revolving from the point with the sod of earth. This mould board was movable, and could be taken off and put on at pleasure. Whether its complexity will prevent its general introduction or not, remains yet to be seen. Its principle is the combination of a revolving apron to move with the earth, and perform the same office as a friction wheel in a shaft box.

**SIDE-HILL PLOWING.**—Plows are now made to go forth and back in the same line, and to turn all the furrows down hill. This is convenient when the land lies in such a position that one side of the hill is inaccessible. When one side only can be plowed, the side hill plow turns the whole in one direction, and no lands are marked off. Some farmers object to turning the furrows all down hill, because they would not expose the high parts to barrenness or dead furrows. But plowing furrows up-hill is decidedly up-hill work, and should be avoided if possible. When we have a circular piece of land, rising in the middle to a peak or a knoll, we begin to plow at the base and make the dead furrow on the ridge. It is so much easier turning furrows down-hill than up-hill, that we prefer to cart a larger share of manure on to the peak, and make up the loss.—*Mass. Ploughman.*

**A CALCULATION ON DURHAMS.**—The committee on cattle, to award premiums, at the last cattle show of the New York Agricultural Society, state in their report as follows: "we believe that if all the cattle sold for beef in the State of New York were full blood Durhams, the farmers of the State of New York would pocket every year some quarter to a half of a million of dollars more than they now do for the same number of cattle."

The same committee also advance an idea which coincides with an opinion which we have long entertained and often expressed, viz., that keeping calves too fat, brings on a tendency to lay on fat when full grown, and deteriorates the milking properties of the animal. They say: "we have no doubt that they appear better during that time fat, than they would in decent growing trim. But we believe there is no doubt that they ever afterward appear less valuable for the purpose of the dairy. Their milking powers being necessarily decreased, and their propensity to take on fat increased, by high feeding at a time when all increase of feed, above what is required for the growth of the animal, must make an increase of fat only."—*Maine Farmer.*

**CUTTING FODDER FOR STOCK.**—That cutting fodder for stock, especially the coarser kinds, is a subject worthy of more attention among farmers, will, I believe, be admitted by all who have given it anything like a fair trial. Cut fodder of every description is of

more value for stock than uncut. I have known persons to be of the opinion, that a horse would thrive as well upon cut hay, as he would without its being cut, and a moderate allowance of oats added.

This may be claiming too much for it; but yet there is a strong argument in its favour.

Horses, as well as other stock, appear to relish the same fodder better for its being cut; besides the advantage of eating it in half the time, allowing more for rest. It also has a tendency to obviate the difficulty to which cattle and horses are subject in the winter season, when they are kept upon dry fodder, of being bound. But another item in the account, and by no means the least, is in using up coarse fodder, such as wheat and oat straw, corn fodder, poor hay, &c., which will be much better eaten by being cut than without.

I have repeatedly seen fodder offered to cattle and refused, and the same fodder, passed through the hay cutter, returned to them apparently to their satisfaction, from the disposition they made of it. Hay that is musty is much improved by cutting, as the dust becomes liberated by the operation. There is one other benefit to be derived, which is in mixing straw, poor hay, &c., with that which is good, by which means all will be eaten. Some, however, may object that straw and poor hay are in a manner worthless, therefore nothing is gained. But we may recollect that the time has not long since gone by, when very many doubted there being any advantage in grinding corn and cobs together for provender, but experiments have established the fact that there is economy in it; and from some experience in mixing fodder, I think the advantage fully equal to mixing corn with cobs for provender.—*Maine Farmer.*

**TWO GREAT BLESSINGS TO THE NORTH.**—The Almighty has showered as many blessings upon the northern sections of the Union as they deserve, but there are two which have always appeared to us as being a little more to be praised than some others that surround us. These two are our forests of wood and lumber and our grass fields. We will leave those who are enjoying the warmth of a good blazing fire during this inclement season to appreciate the blessings of the first, while we will descant a little upon the latter. We have noticed for years, that the people of Maine could withstand the loss of almost any crop better than they could the loss of the grass crop. Cut that off and they begin to feel poor immediately. Their cattle must either be sacrificed or fed upon their bread crop. If their cattle are sold or destroyed, they fall short of manure for next year's crops. They must use up many other resources to keep themselves in shape, as they say; and it takes several years to make up the damage and loss occasioned by the loss of one crop of hay. A southern writer, in one of their agricultural journals, some time ago, observed that "the great secret of the astonishing resources of the frozen regions of the north lies in its grasses, of which clover is the chief." The southerner is right.

If you agree with us in this conclusion, you will also agree with us that it is not only a duty, but would be wise, as a matter of profit, to make all possible effort to increase this blessing, by sowing the best of grass seeds; by manuring and enriching fields already in grass, and by draining and ameliorating lowlands to enable them to grow more and better grasses. No crops can be so easily raised as grasses, and if none is more valuable to us, it is good policy to increase as much as we are able.—*Maine Farmer.*

Never buy any quantity of seed without knowing the party you buy of; and before you depend on it for a crop, put a hundred grains in a hot-bed, and see what proportion is alive and what dead.

## Horticulture.

### TREATMENT OF FRUIT TREES, TRANSPLANTING, &c.

We take the following directions from that excellent work, "Downing's Fruits and Fruit Trees of America." An extensive gardener near this city, when asked for an article on the subject of fruit trees, referred us to the work of Mr. Downing, whose instructions he said could not be improved upon:

As nearly all fruit trees are raised first in nurseries, and then removed to their final position in the orchard or fruit garden; as upon the manner of this removal depends not only their slow or rapid growth, their feebleness or vigour afterwards, and in many cases even their life, it is evident that it is in the highest degree important, to understand and practise well this *transplanting*.

The season best adapted for transplanting fruit trees is a matter open to much difference of opinion among horticulturists; a difference founded mainly on experience, but without taking into account variation of climate and soils, two very important circumstances in all operations of this kind.

All physiologists, however, agree that the best season for transplanting deciduous trees is in autumn, directly after the fall of the leaf. The tree is then in a completely dormant state. Transplanted at this early season, whatever wounds may have been made in the roots commence healing at once, as a deposit directly takes place of granulous matter from the wound, and when the spring arrives the tree is already somewhat established, and ready to commence its growth. Autumn planting is for this reason greatly to be preferred in all mild climates, and dry soils; and even for very hardy trees, as the apple, in colder latitudes; as the fixed position in the ground, which trees planted then get by the autumnal and early spring rains, gives them an advantage, at the next season of growth, over newly moved trees.

On the other hand, in northern portions of the Union, where the winters commence early, and are severe, spring planting is greatly preferred. There autumn and winter are not mild enough to allow this gradual process of healing and establishing the roots to go on; for when the ground is frozen to the depth of the roots of a tree, all that slow growth and collection of nutriment by the roots is necessarily at an end. And the more tender sorts of fruit trees, the Peach and Apricot, which are less hardy when newly planted than when their roots are entire, and well fixed in the soil, are liable to injury in their branches by the cold. The proper time, in such a climate, is as early as the ground is in a fit condition in the spring.

Early in autumn, and in spring before the buds expand, may as a general rule be considered the best seasons for transplanting. It is true that there are instances of excellent success in planting at all seasons, except midsummer; and there are many who, from having been once or twice successful in transplanting when trees were nearly in leaf, avow that to be the best season; not taking into account, that

their success was probably entirely owing to a fortunately damp state of the atmosphere at the time; and abundant rains after the experiment was performed. In the middle states, we are frequently liable to a dry period in early summer, directly following the season of removal, and if transplanting is deferred to a late period in spring, many of the trees will perish from drought, before their roots become established in the soil. Spring planting should therefore, always be performed as soon as possible, that the roots may have the great benefit of the early and abundant rains of that season, and get well started before the heat of summer commences.— For the neighborhood of New York, therefore, the best periods are, from the fall of the leaf, to the middle of November, in autumn; and, from the close of winter, to the middle of April, in the spring; though commonly, the seasons of removal are frequently extended a month beyond these limits.

*Taking up the trees* is an important part of the operation. A transplanter should never forget that it is by the delicate and tender points or extremities of the root that trees take up their food; and that the chance of complete success is lessened, by every one of these points that is bruised or destroyed. If we could remove trees with every fibre entire, as we do a plant in a pot, they would scarcely show any sign of their change of position. In most cases, especially in that of trees taken from nurseries, this is, by the operation of removal, nearly impossible. But although we may not hope to get every root entire, we may, with proper care, preserve by far the larger portion of them, and more particularly the small and delicate fibres. After being taken up, they should be planted directly; or, if this cannot be done, they should be kept from drying by a covering of mats, and when sent to a distance by being packed in damp moss.\*

*Preparing the places.* Here is the fatal stumbling block of all novices and ignorant persons in transplanting. An English gardener, when he is about to plant fruit trees, talks about *preparing his borders*, an American says he will *dig his holes*; and we cannot give a more forcible illustration of the ideas of two persons as to the wants of a fruit tree, or a better notion of the comparative provision made to supply these wants, than by contrasting the two phrases themselves. The one looks upon a tree as a living being, whose life is to be rendered long, vigorous, and fruitful by a good supply of food, and a soil mellow and easily penetrated by the smallest fibre; the other considers it very much in the light of a truncheon or a post, which he thrusts into the smallest possible hole, and supplies with the least portion of manure, trusting to what he seems to believe the inextinguishable powers of nature to make roots and branches under any circumstances. It is true that the terms differ somewhat from the nature of the culture and the greater preparation necessary in planting fruit trees in England, but this is not by any means sufficient to justify the different modes of performing the same operation there and here.

In truth, in this country, where the sun and cli-

\*We should notice an important exception to this in the case of trees packed for shipping across the Atlantic. In this case they should be packed only in *dry* moss; the moisture of the sea air being sufficient to keep the roots in good condition, while if packed in damp moss they will be injured by rotting or excessive growth

mate are so favourable, where pruning and training are comparatively so little necessary, the great requisite to success in the ordinary culture of fruit trees is the *proper preparation of the soil* before a tree is planted. Whether a transplanted tree shall struggle several years to recover, or grow moderately after a short time, or at once start into a very luxuriant and vigorous growth, depends entirely upon the amount of care and labor the planter is able to bestow on the soil for his trees. We have seen several instances where, side by side, one man planted his trees in large spaces of deeply moved and rich soil, and another in small holes in the common mode, which uniformly showed the trees of the first larger after five years, than those of the last, after twelve.

No fruit tree should be planted in a hole of less size than three feet square, and 18 inches to two feet deep. To this size and depth the soil should be removed and well pulverized, and it should if necessary be properly enriched by the application of manure, which must be thoroughly mixed with the whole mass of prepared soil by repeated turnings with the spade. This preparation will answer, but the most skillful cultivators among us make their spaces four or five feet in diameter, or three times the size of the roots, and it is incredible how much the luxuriance and vigour of growth, even in a poor soil, is promoted by this. No after mending of the soil, or top dressings applied to the surface, can, in a climate of dry summers like ours, equal the effects of this early and deep loosening and enriching the soil. Its effects on the growth and health of the tree are permanent, and the little expense and care necessary in this preparation is a source of early and constant pleasure to the planter. This preparation may be made just before the tree is planted, but, in heavy soils, it is much better to do it several months previously; and no shallow ploughing of the soil can obviate the necessity and advantages of the practice, where healthy, vigorous orchards or fruit gardens are desired.

The whole art of transplanting, after this, consists in placing the roots as they were before, or in the most favorable position for growth. Begin by filling the hole with the prepared soil, within as many inches of the top as will allow the tree to stand exactly as deep as it previously stood. With the spade, shape this soil for the roots in the form of a little hillock on which to place the roots—and not, as is commonly done, in the form of a hollow; the roots will then extend in their natural position, not being forced to turn up at the ends. Next examine the roots, and cut off all wounded parts, paring the wound smooth. Hold the tree upright on its little mound in the hole of prepared soil; extend the roots and cover them carefully with the remaining pulverized soil. As much of the success of transplanting depends on bringing the soil in contact with every fibre, so as to leave no hollows to cause the decay of the roots, not only must this be secured by patiently filling-in all cavities among the roots, but when the trees are not quite small, it is customary to pour in a pail of water when the roots are nearly all covered with soil. This carries the liquid mould to every hidden part. After the water has settled away, fill up the hole, pressing the earth gently about the tree with the foot, but avoiding the common practice of shaking it up and down

by the stem. In windy situations it will be necessary to place a stake by the side of each tree to hold it upright, until it shall have taken firm root in the soil, but it is not needful in ordinary cases.

*Avoid deep planting.* More than half the losses in orchard planting in America arise from this cause, and the equally common one of crowding the earth too tightly about the roots. No tree should be planted deeper than it formerly grew, as its roots are stifled from the want of air, or starved by the poverty of the soil at the depth where they are placed. It is much the better and more natural process in fact to plant the tree so that it shall, when the whole is complete, appear just as deep as before, but standing on a little mound two or three inches higher than the level of the ground about. This, when the mound settles, will leave it nearly on the level with the previous surface.

*Mulching* is an excellent practice with transplanted trees, and more especially for those which are removed late in the spring. Mulching is nothing more than covering the ground about the stems with coarse straw, or litter from the barn-yard, which by preventing evaporation keeps the soil from becoming dry, and maintains it in that moist and equitable condition of temperature most favorable to the growth of young roots. Very many trees, in a dry season, fail at midsummer, after having made a fine start, from the parched and variable condition of the earth about the roots. Watering frequently fails to save such trees, but mulching when they are planted will entirely obviate the necessity of watering in dry seasons, and promote growth under any circumstances. Indeed watering upon the surface, as commonly performed, is a most injurious practice, as the roots stimulated at one period of the day by water, are only rendered more susceptible to the action of the hot sun at another, and the surface of the ground becomes so hard, by repeated watering, that the beneficial access of the air is almost cut off. If trees are well watered in the holes, while transplanting is going on, they will rarely need it again, and we may say *never*, if they are well mulched directly after planting.

*The best manure* to be used in preparing the soil for transplanting trees, is a compost formed of two-thirds muck or black peat earth, reduced by fermenting it several months in a heap with one-third fresh barn-yard manure. Almost every farm will supply this, and it is more permanent in its effects, and less drying in its nature, than the common manure of the stable. An admirable manure, recently applied with great success, is charcoal—the small broken bits and refuse of the charcoal pits—mixed intimately with the soil. Air-slaked lime is an excellent manure for fruit trees in soils that are not naturally calcareous. Two or three handfuls may be mixed with the soil when preparing each space for planting, and a top dressing may be applied with advantage occasionally afterwards, to increase their productiveness. But wherever large orchards or fruit gardens are to be planted, the muck compost heap should be made ready beforehand, as it is the cheapest, most valuable, and durable of all manures for fruit trees.

A bright ploughshare is the cheapest commodity ever used by a farmer.—Cobbett.

To the Editors of the Canadian Agriculturist.

GENTLEMEN,—A correspondent of yours, signing himself C. J. B., requests information concerning the best mode of cutting asparagus. He says he saw in one of your late numbers an article from a farmer, who grew asparagus as thick as fork-handles, and that he cut the young shoots over the ground. Now I should like to know what kind of fork-handles it was that he compared the thickness of his asparagus with. I can hardly think he meant hay-fork handles, for as far as my experience goes, I have never seen any asparagus shoots that would bear any comparison to the thickness of an ordinary sized hay-fork handle. I think your correspondent must have meant a table-fork handle—and even to grow Asparagus that size would require good cultivation. In answer to the question, whether it is better to cut asparagus under or above the ground, I think it quite immaterial as regards the cultivation. The general and most approved mode of cutting asparagus, is to cut the buds obliquely about two inches below the surface, taking care not to wound any of the young buds proceeding from the same roots. If any of your readers wish to have a good asparagus bed, and were to follow out the following directions, I think they would not be disappointed. A piece of ground to grow asparagus for a small family, ought to be 20 by 25 feet. Let this be marked out in a part of the garden that is not too wet, nor the soil too strong or stubborn, but such as will easily fall to pieces in digging or raking. Let this piece of ground be excavated clear out, to the depth of at least eighteen inches; having done this, have a good supply of well-rotted manure at hand, to put into the bottom of your bed—fully four inches thick of the manure and a layer of earth above it, and then another layer of manure; and continue putting in a layer of manure until you raise your bed one foot above the ordinary level of the garden. When you have finished this part of the work, let the whole be firmly trod down, and raked level and smooth on the surface. To plant a bed of this size, you will require four hundred good two-year-old plants, which can be procured at any of the public nurseries. The best kind are the large Battersea, or Giant. To prepare for planting, lay your line within six inches of the outside of the bed, and with the spade cut a small trench or drill, six inches deep. When one drill is opened, plant that before you open another. Let the plants be about twelve inches apart in the drill, and take care to spread their roots well out, and keep the crowns about four inches below the surface. Cover the whole in, and proceed to open another drill, fifteen inches apart, and so on until you have finished your bed. Asparagus beds prepared in this way, and top-dressed every year with well rotted manure, will continue to produce good crops for twenty years. Ground to grow asparagus may be prepared at any season of the year, but the best time to plant is late in the fall, or early in the spring; and all new planted beds of asparagus should be allowed to grow for two years before cutting any. With these remarks on the cultivation of this excellent vegetable,

I am, Gentlemen, yours very respectfully,  
JAMES FLEMING.

Yonge Street Nursery,  
Toronto, Feb. 14, 1849.

OFFICE OF LEAVES—SINGULAR OCCURRENCE.—The past season has been unusually favourable to the occurrence of leaf-blight in plums and pears, in many parts of the country. Not only have seedlings been seriously affected, so as to lose nearly all their foliage in midsummer, but large and bearing trees have often become more or less stripped, and, as a well known consequence, the quality of the fruit has greatly suffered.

A singular occurrence, shewing that the flavour in maturing, depends wholly on the office of the leaves, was the following:—The crop of a Yellow Gage Plum tree, by means of daily attacks on the curculioes, was saved from their punctures, and promised a fine supply. But when the fruit was two-thirds grown, and of course wholly destitute of any good flavor, the leaves all dropped from the tree; not one was left. The branches were perfectly bare, with the exception of the load of plums which half obscured them. The plums remained on the tree, without changing any in size, color, or taste, while others on trees not so affected, were rapidly ripening round them. In two or three weeks, a second crop of leaves appeared, when the fruit immediately commenced a second growth, and attained full size. It subsequently assumed the usual color, and all the richness of flavor of well ripened specimens, and was about one month later than the usual period of maturity.

Other varieties, affected with leaf-blight, presented similar results, but less striking; and nearly all of them, soon after the appearance of the second growth of leaves early in autumn, were also observed with a thin crop of blossoms.—*Albany Cultivator.*

THE BEAUTIFUL AND PICTURESQUE.—After its own fashion, nothing can really be more beautiful than is the old-fashioned garden, with its terraces, its parterres, its grass-plots, its clipped hedges, its rolled walks, its trim shrubberies, its shaven lawns, its regularly cut borders, and its fountains or fish ponds, surrounded with green and level turf. Its beauty is, however, artificial, for the most part. We love to see the hand of man thus subdue nature to his purposes. The elegance resides in the regularity. It is the beauty of order opposed to that of luxuriance; of art overcoming the wildness of nature—

"No pleasing intricacies intervene;  
No artful wildness to perplex the scene.  
Grove nods at grove: each alley has a brother;  
And half the platform just reflects the other."

Let that fair garden, however, be neglected for a season. Let the grass grow rankly; the shrubs and hedges remain uncut; the fruit trees unpruned—let the flowers run to seed, the herbs run wild, the walks become clad with thistles and dandelion and coarse grass, the borders become ragged, and tall weeds mingle with once-cultivated flowers; whilst wild runners thicken the hedges, and moss and ivy and wild flowers load the walls. Let the luxuriance of neglect usurp the place of artificial neatness, and the charm of beauty is fled. Another, however, has taken its place. A picturesque disorder has sprung up. The lawn is lost in its own grass—the flowers are struggling to emerge from amidst weeds—the narrow walks have become tangled thickets—the sheets of water, forests of reeds or swamps of water-lilies—the arbours have become covers for the weasel or the stoat—the whole one wild wilderness, in which the eye seeks in vain for a resting-place; but which poets describe and tourists mourn over—a sad spectacle of picturesque decay.—*British Quarterly Review.*

RUSSIAN METHOD OF TRAINING FRUIT TREES.—The severity of the winter at St. Petersburg is so great that few fruit trees will survive it, even with careful mat-

ting; to prevent the loss which is thus usually sustained, I have for more than twenty years pursued a mode of training which has been attended with complete success. It consists in leading the branches of the trees on horizontal trellises only ten or twelve inches from the ground. When the winter sets in, there are heavy falls of snow; and as the frost increases, the snow generally augments, by which the trees are entirely buried, and receive no injury from the most intense frost. The winters of 1819 and 1820 were very severe, notwithstanding which, last summer, I had a great crop of apples, and all of the tender sorts, while none of the gardens in the neighbourhood produced any; even many of my trees, although doubly matted, were killed. From my Green Gage and Orleans Plums I gathered ripe fruit on the 19th September last; I had also a very full crop of Morello Cherries. Another very great advantage of training trees in the above method consists in the growth of the wood, it being of equal strength, and the fruit produced being all alike, the bloom comes out much earlier, and the crop ripens sooner. The trees are always clean and free from insects; I have observed this even while some standards near them have had their leaves curled by aphides. The only cherry that does not succeed in this way, is our Black-heart; this I attribute to the damps which affect the early blossoms, but in a milder climate this injury would be obviated by placing the trellis higher from the ground. When the trellis decays under the apples, I never renew it, as the trees always keep (from the strength of their branches) their horizontal position. There are other advantages of treating fruit trees in this manner: they come sooner into bearing, and their fruit is not affected by high winds. I never gather apples, but let them drop off, for the distance they fall is not sufficient to bruise them. Probably pears trained in this way would answer well in England.—*Horticult. Magazine.*

**AIR NECESSARY TO ROOTS.**—Although the roots of trees and plants must be buried in the earth, yet it is evident that they must have some dependence upon the air, and the fact that plants will flourish better where the soil is stirred, even if not manured, than they will in the same quality of soil that is neither stirred nor manured, is evidence that the air mingled in the soil is of benefit to the roots. It was a theory of Tull that the mere pulverizing the soil was all that was necessary to raise good crops, and by his experiments, where he practiced the pulverizing system thoroughly, proved that it was of great service. We do not, however, subscribe to his theory that pulverizing the soil is sufficient without manure. They should go together—but if manure cannot be had, pulverizing or stirring the earth should not be neglected.

It may seem rather improbable to some, that air should penetrate so far into the ground as to come into contact with the roots. How far down one would have to dig to find earth so compact and solid as to have no air mingled with it, is not known; but that there is more or less so mingled with the ground or earth at a great depth, is certain. Even water, which, though a fluid, is more dense than soil, nevertheless contains much air mixed with its particles, as can be abundantly proved by putting some under the receiver of an air pump, and exhausting the air therefrom. It is said that the seeds of vegetables will not vegetate under an exhausted receiver; and is it not fair to infer that if air is necessary to start forth the roots, it is also necessary to increase their growth?

Every seed is a magazine of material, snugly packed around the germ of the future plant. This material must be changed in its character before it can be used by the plant, and lies dormant until it is placed in circumstances where all the changes which are necessary

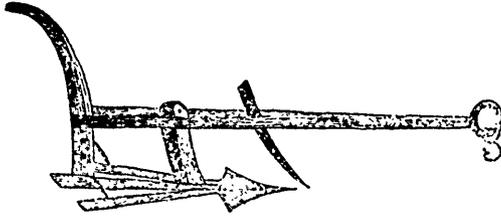
can be brought about. When thus changed, it nourishes the young plant until its roots are extended into the earth and its branches into the air. The first portion of the germ that starts, is generally, if not always, the root. This root plunges into the ground. It at first contains or receives a portion of the changed material of the seed, (which is a sort of gum, and is called by chemists *diastase*.) It absorbs moisture from the earth, and also carbonic acid gas, which mingles with this *diastase*, and is carried up into the leaves. The leaves are so formed by Divine Wisdom, that through the agency of light and heat they *elaborate* or manufacture this sap into the peculiar products essential to the plant, and which characterize and distinguish it from other plants. Thus the leaf of the apple forms the juices peculiar to the apple, and the leaves of the pear the juices peculiar to the pear—and the different varieties of apples, as the Baldwin and the Greening, each the peculiar juices that distinguish these two varieties, and so on. Well, ever after this the root continues to act the same part toward the plant that the seed (or cotyledons) did towards the germ—forming, in fact, a magazine or store house in which the material necessary for future growth of branch and fruit, as elaborated or manufactured by the leaf, shall be stored, at the return of every year, when it receives the stimulus of the approaching sun of spring, be mingled with the moisture containing the inorganic materials necessary for the plant, such as potash, silica, and also of carbonic acid, which forms the woody part. Every one knows that the leaves of a plant and the roots (or rather the little rootlets which spring out from the *under-ground branches*, and which are in fact the proper roots) are dependent upon each other for existence. Destroy the leaves, and the rootlets die. Destroy the rootlets and the leaves die. Each have their appropriate duty to perform, and to enable them to perform these duties, and in the greatest possible perfection, certain things are requisite. To give them these things, so that they may perfect the plant, is the whole art of agriculture, and to practice this art to the greatest advantage, a thorough knowledge of vegetable physiology is necessary. Without, however, going at present any farther into these matters, we will remind our readers that to enable leaves to perform their duties, they must have warmth, light, and atmospheric air—to enable roots to perform theirs, they must have heat, moisture, and atmospheric air. This moisture must hold in solution inorganic and organic materials—hence the use of applying manures which contain those things, and loosen the earth, let in the air, and allow the roots to extend. Also, the importance of stirring the earth frequently, whether you have or have not manures.—*Maine Farmer.*

**PROFITS OF APPLE ORCHARDS.**—The *American Agriculturist* says, a gentleman having less than seven acres of orchard, realizes from \$500 to \$750 worth of apples annually.

In another exchange paper it is stated, that an old orchard of four or five acres, that had not been ploughed for thirty years, and was said to be worthless, was ploughed and harrowed, and the third year thereafter produced two hundred and eighty bushels of superior apples.

**GYPSON AS MANURE.**—Gypsum, or plaster, ought to be used wherever it can be advantageously. It is not only one of the cheapest manures, but one of the most beneficial. It affords direct food to many plants; draws the nutritious gases from the atmosphere for the support of plants; and it concentrates the dews upon them, early in the afternoon, and late in the morning. When plaster is applied and suited to the soil and crop, you can discern its effects for several miles.

## Mechanics and General Science.



ROMAN PLOUGH.

## THE PLOUGH.

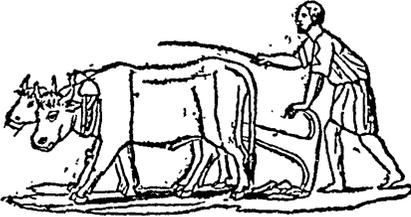
## NO. II.

In continuing our remarks on the Plough, we thought it would not be amiss before we leave the historical part of the subject, to present our readers with two or three drawings representing the form and appearance of this implement at different periods of the world, and in different countries. They will be better able to judge of the farming of the early cultivators, and to see and appreciate the great superiority of the modern systems. Show us the agricultural implements of any nation, and we can judge with tolerable correctness of the character of their agriculture. Other circumstances, however, must sometimes be taken into account. In forming an opinion of the agriculture of the ancient Romans, for instance, from such data alone, an American cultivator would be very likely to err. The mellow, fruitful soil of Italy and the neighbouring countries, and the temperate climate with which they are favoured, enabled the farmer to obtain a large amount of produce from his willing fields, with little labour. His implements were rude in construction, and few in number. When Romulus first partitioned the lands of the infant state among his followers, he gave each one as much as he could cultivate well, which he thought should not exceed two acres. After the kings were expelled, the number was increased to seven acres for each citizen. Cincinnatus, who was summoned from the plough to be Dictator, possessed, according to some authorities, only four acres. Several others, distinguished as the most deserving Romans, had estates no larger than this. The Roman farmers lived on these small plots, and cultivated them with their own hands; and when we consider this fact, in connexion with the character of the soil and climate of their country, we need not be surprised to find that the products of their farming, and their general agricultural knowledge, greatly exceeded the standard which we might be disposed to assign them, from an examination of their implements merely.

The cut at the head of this article represents

the Roman plough of a later period than that of which we have been speaking, and it consequently exhibits considerable improvement. It has been well remarked, that "Agriculture, unlike the arts of luxury, has never been subject to any retrograde revolutions." Its advances may have been slow—for long periods it may seem to have been stationary—but still, if we take any generation of cultivators, and compare them with their immediate predecessors, we shall be able to discover (unless some political causes have prevented the result) clear evidences of *improvement*. This fact should inspire the intelligent and patriotic farmer with hope and confidence.

The above plough is that described by Virgil in the "Georgics" as being in use in his day, which was about 750 years after the founding of the city of Rome, and near the commencement of the Christian era. It consists of a beam (*temo*); a body, (*buris*); a share, (*comer*); and a handle or stilt, (*stiva*). The office of the turn furrow is performed by two pieces of wood about six inches long, projecting obliquely upwards, and very properly called teeth (*dentalia*). The sole of the plough has two pieces of wood fixed to it on each side, forming an acute angle with it, in which the teeth are inserted. This exactly answers the description of Virgil "Duplici, aptantere dentalia dorso" (the teeth are fitted to the double back).—These teeth help to push aside the earth to the right and left. The point was shaped like the head of a lance. The coulter is similar to that now in use among us. Improvements were gradually made upon this, chiefly in the addition of slanting boards to the teeth, which strengthened the implement, and were better calculated to turn the furrow. The stilt remained for a long time the same at the place where it was attached to the body, but it was divided into two parts near the end for the convenience of holding with both hands. The change from this form to the broad, flat share and the single mould board, by which the earth is turned completely over and the operation of ploughing made to resemble very nearly that of digging, was not difficult to accomplish, though important in its consequences.



OLD ROMAN PLOUGH.

This is a representation of the plough used by the Romans of a much earlier day. It appears here in its simplest form, for it is difficult to imagine any thing more rude or less complex. We find the following account of the way in which it was constructed, under the word *ARATRUM*, in Professor Anthon's edition of the "Dictionary of Greek and Roman Antiquities." "The method of forming a plough of this kind was by taking a young tree with two branches proceeding from its trunk in opposite directions, so that while in ploughing the trunk was made to serve for the pole, one of the two branches stood upward and became the tail, and the other penetrated the ground, and being covered sometimes with bronze or iron, fulfilled the purpose of a share." If the form of the implement indicated a low state of knowledge in agriculture, the mode of constructing it does not certainly impress us with very high notions of mechanical skill. If the hog's snout was the true original of the plough, this assuredly was the first copy of it.



ANCIENT GREEK PLOUGH.

The above is called in some of the authorities, the "Greek plough," and is represented as belonging to an earlier period than the Roman plough at the head of this article. Of the two the last mentioned is probably the more efficient, and in our opinion indicates a higher state of culture.—Though the addition of the wheel, is said to be an improvement which implies an advanced agriculture, it is very obvious that a plough of this shape could not be kept at a uniform depth, even with the assistance of the wheel, without constant and laborious effort by the ploughman. It resembles closely the *bull or shovel plough* of this country, used for earthing up corn and potatoes. In a light clean soil it might do very fair work in the way of stirring and loosening, but it would cut a sorry figure in turning over a tough sod, or a stiff clay. In the work above quoted we are informed, that this cut is copied from a "piece of engraved jasper of Roman workmanship." An opinion is

expressed by the author, that "instead of the simple plough of the Greeks" it is more likely to be "that described by the Mantuan poet, and used no doubt in his country." But as Virgil speaks of the share-beams being in the form of the Greek letter A, and also uses other expressions quite inapplicable to any part of the above, we incline to the opinion that it is a Greek and not a Roman plough, and was used long before Virgil's time. Such mistakes and anachronisms are very easily fallen into by the learned explorers of antiquity, who are in most cases practically ignorant of the nature and uses of the common implements of husbandry, even in their own age and country.

Having thus given the reader some idea of the construction and appearance of the *plough* in different ages of the world and among different nations, we shall proceed to consider the scientific principles which it is supposed to involve, and in accordance with which its form is regulated among ourselves.

**CHEMICAL COMBINATION.**—Another striking example of this chemical creation is the Protoxide of Nitrogen—called from its effects the *intoxicating gas*—a simple combination, in slightly altered proportions, of the oxygen and nitrogen composing the air we breathe; but nowhere existing in nature under the form in which science presents it to us. The admission, now generally made, that atmospheric air is a simple intermixture of gases, and not a chemical compound, scarcely abates the wonder that so small a change in the proportion which ministers to common life, should become the cause of those sudden and singular affections of the brain and nervous system, which alter for a time the whole condition of the being. Chemistry, however, and especially organic chemistry, accustoms us to these wonders. More strange and striking still, in their properties recently discovered, are the two creations of the laboratory, Sulphuric Ether and Chloroform. By working with and among the relative affinities of certain elements, man has obtained these compounds—and there may be others of kindred quality—the simple inhalation of which produces a state of insensibility to pain, even under operations the most severe which surgery can inflict. We have spoken much of chemical analysis. This is in effect an analysis of the compound nature of man; the separation and the removal for a time of a part of our sensitive existence—having close analogy indeed to certain of the conditions of sleep (itself the great miracle and mystery of life,) but even more striking in some of the inferences it conveys; and unless it be that bodily suffering is allotted to us for moral uses—a discovery profuse of future benefit to the human race.—*Quarterly Review*.

**EXCHANGE OF SEEDS.**—It is an excellent rule in Agriculture, to effect an exchange of seeds as often as once in every two or three years. Why it is that the most of our crops succeed better when cultivated on soil at a slight distance from those on which they were perfected, we confess ourselves unable to decide, yet the fact itself is so obvious, and has indeed been so frequently and fully corroborated by experience, that it no longer admits of a doubt. The winter is a very favourable period for bringing about exchanges of this nature, as well as for procuring new varieties of seeds, plants and roots.

## A RUSSIAN BEE-HIVE.

Fig. 1.

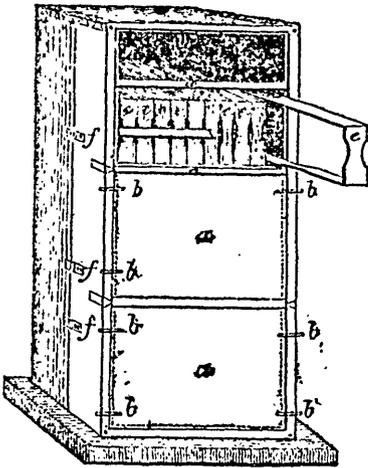


Fig. 5.

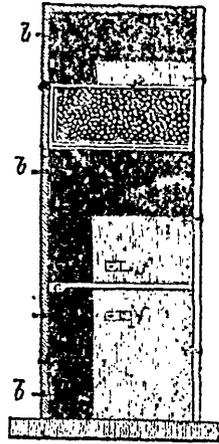


Fig. 2.

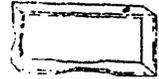
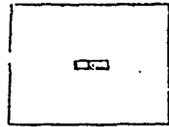


Fig. 3.



Fig. 4.



## RUSSIAN BEE-HIVE.

There has been as much ingenuity expended in the construction of the Bee-hive as in that of the straw-cutter; and in consequence, as many different forms and varieties have been produced. It is impossible for any one, under such circumstances, to pronounce with certainty which is best, unless indeed he should have tried them *all*, for a sufficient length of time to test the merits of each. Such a person is not likely to be found. We had hoped to obtain for this number, a communication from a gentleman near this city, who is an extensive apiarian, and who has tried a number of the improved hives which have been presented to the public within the last few years, and would, therefore, be good authority on the subject. But his remarks are not forthcoming, and we must for the present, do without them. We trust some of our readers who are acquainted with the subject, will take the trouble to give us and the public the benefit of their experience on this point, as well as on the management of bees generally. It is a subject both interesting and useful. And if a better knowledge of the habits, uses, profits, economy and management of this little insect—one of the few of the insect tribe which is not an enemy to man—were more generally diffused, it would make the raising of bees more frequent and successful, and add greatly to the comforts and pleasures of the farmer's home.

We present to our readers, in this number, the plan of a Russian hive, which is said to possess great merit. It is somewhat complicated, and the description will not probably be fully understood by those unacquainted with the subject. We shall, in a future number, give a cut and description of a more simple hive, which answers a very good purpose. But as there is no country in

the world, which produces a greater quantity of honey and wax than Russia, it may be well supposed that the Russians understand the habits and management of bees very thoroughly, and their system is therefore worthy of examination. A new system has lately been introduced by a distinguished apiarian, which has gained immense celebrity, not only in that country, but also in the northern parts of continental Europe, to which it is supposed to be especially adapted. It has also been practised extensively in France.

The Russian system owes its origin and establishment to M. Prokopovitch, an individual who has devoted more than half his life to the subject. His reputation as an apiarian is at present so high, as to have enabled him to establish an extensive school for teaching the art of managing bees. His school and dwelling-houses are situated in the midst of a vast garden, in which are found no less than *twenty-eight hundred hives*. The number of his pupils is never under eighty, who come from all parts of Russia, and remain two years. His terms are very moderate.

In studying the nature and characteristics of the queen, he made the discovery that she always keeps upon the honeycomb, and never creeps upon any part of the hive. This observation he has turned to advantage, so as to make the bees assort and dispose their honey in whatever manner he desires it to be deposited.

*Description of the Russian Bee-hive.*

Fig. 1 represents the hive in perspective, supported upon a floor of brick or stone, carried beyond the sides of the hive, so as to secure a solid foundation. The usual size of this hive is three feet six inches in height, fourteen, twenty, and even as much as twenty-two inches in width, and from twelve to sixteen inches in depth. The box or case is made of five boards, either nailed, or, what

is better, dovetailed together. The pieces represented at *a, a, a*, are three doors of equal size, which are fixed into mortises or grooves, and fastened by the pegs *b, b, c, c*, are movable pieces, an inch wide, upon which the movable doors rest. *d*, small slats fastened into the sides of the hive by mortises. These serve to prevent the doors from touching the honeycomb. Each range of frames has one of these slats.

*e, e, e*, are small frames in which the bees work and deposit their honeycomb. These frames are notched and scooped out circularly upon the lower side, as well as upon both edges of the front end, as represented in Fig. 2. The opening left by the hollow in the lowermost side serves for the bees to enter from beneath, whilst the hollows on the two sides of the front end of the frame admit the movements of the bees to be observed. These frames are thin; their thickness, however, is not arbitrary, but must be made to correspond to the size and form which the bees give to their cells. When placed side by side the frames must not touch, but a small space is to be left between to allow a little play, and prevent them from wedging together, and becoming tight in warm weather, when the wood swells.

*f, f, f*, are three places of entrance for the bees, furnished with slides. These are so arranged that the middle one comes exactly in the middle of its compartment; the upper one is an inch higher than the upper slat; whilst the lower opening is an inch lower than the lowermost slat.

*l* (fig. 3) is a grating to be used in autumn, when it may be desired to separate the empty parts from those filled with comb. This grating, or *adapter*, remains in contact with the bees. *g* (fig. 4) represents a small board, which is to be placed on the top of the grating.

Fig. 5 is a transverse section, in which may be seen the places of entrance, *f*, the depth of the frames, *a, a*, and at *c*, one of the combs.

The various kinds of hives, constructed in sections or compartments, may be divided into two classes, namely,—those in which the divisions are made either horizontally or vertically. The first are founded upon the well known necessity for allowing space for the new combs; the second, from the advantage to be derived from separating the swarms artificially. To carry out these plans, very complicated contrivances have generally been employed, whilst the Russian hive effects every necessary object to be gained from section or division hives.

The leading principle of the Russian hive, which, it will be seen, is quite plain in construction, and economical as to first cost,—consists in its capacity to be reversed or turned upside down, a very simple operation, which, however, leads to the most important results in the management of bees.

Reversing the hive not only allows of the perfect renewal of the wax, but furnishes an opportunity of inspecting everything passing within, by means of the movable doors, and, at the same time, of conducting all the operations at pleasure, thus uniting all the advantages of the two systems of horizontal and vertical section hives, such as the separation of swarms, &c.

By means of the operation of reversing, the bee-manager, who introduces a swarm into the Russian

hive, will, during three years, be able to withdraw each year one of the three divisions alternately, or one-third of the whole mass of honey deposited; at the end of the period mentioned, he will have thus produced a perfect renewal of the wax; that is to say, at this time he will be obliged to reverse or turn up the hive, the former bottom of which now becomes the top.

The mode in which M. Prokopovitch manages to make his bees assort their honey themselves, is effected by means of a very simple contrivance. Many others have devised modes very similar to those adopted by the Russian apiarian, but it is asserted that their objects had not the same end, since they only sought to obtain the virgin honey. No one has before believed it practicable to procure honey of a uniform quality, and which at the same time is virgin honey. The idea therefore originally belongs to M. Prokopovitch, who, whilst pursuing his apiarian studies, had it suggested to him, by a plan adopted by Huber for the mere purpose of being able to watch the habits of bees.

The process of working the Russian hive is as follows: In autumn, after having taken the upper portion of the crop, when the amount of honey admits this to be done, the part of the hive thus left empty is separated from the rest of the comb, by introducing the grating *h*, and placing upon it the board *g*. In this state the hive is conveyed to some suitable place to pass the winter. The following summer, at the arrival of the season when the plant from which honey is to be collected is in flower, the board is removed, and the frames *e* placed upon the grating. These frames, which are made of very thin stuff, have a length equal to the depth of the hive. Their height is about half that of their length, and their width or thickness ought not to exceed an inch and a half.

Two sides of the frame, have, as already described, two notches or hollows which reduce their width. One of these is the long side which comes in contact with the grating, affording passage to the bees, whilst the other is the end near the door which admits the movements of the bees to be inspected. Before these frames are arranged in their places, a little dry wax is to be stuck along the middle of the upper side of the frame, (the side which is not scooped out). This is for the purpose of directing the bees where they must place their combs.

By the arrangement described, the bees, finding above them a vacant space, commence their work in it, and finding in the flowers in bloom sufficient material, fill the cases with honey, and this they do with the more rapidity from the circumstance of the queen's being separated by a space not yet occupied by the combs, and her inability to reach these to lay her eggs in them. The cases in which the honey is deposited are sealed up immediately the comb is observed to have reached the lower part of the box, and before the queen has had an opportunity of depositing in it any eggs. The honey thus obtained is of remarkable purity, and may be taken to market in the same frames in which it was originally made. These may even be packed up together in cases, and transported in wagons to great distances, without doing the least injury to the honey.

The more a man works, the less time he will have to grumble about "hard times."

**THE CHEMISTRY OF LIFE.**—A wonderful part of the phenomena of Organic Chemistry is the diversity of properties produced, even by slight changes in elementary composition and proportions. We have already noted this in certain instances; but the proofs, most singular and impressive, are those connected with the influence of organic agents on animal life. An atom added to, or abstracted from, a compound, determines whether the product be wholesome or noxious—an aliment or a poison. So closely is the Chemistry of the material world around us associated with that still more refined and mysterious Chemistry which ministers to the phenomena of life! Every solid tissue, every fluid of the body, has its appropriate chemical composition and relations. Every organic function depends upon, or involves, chemical changes in its progress. The air we breathe is no sooner within the lungs than these changes begin; analogous to combustion in their nature, and effecting that transformation from venous to arterial blood, which is essential to life in its every part. The food we take hardly enters the stomach before it becomes the subject of chemical actions, which are continued and multiplied, till its final assimilation and admission into the mass of circulating fluids. All the secretions and excretions from the blood, many of them singularly complex in their nature, depend on like agency; subordinate, however, as is all besides in the animal frame, to that vital principle, which we everywhere see in its effects, though unable to separate or define it. Morbid changes and growths may frequently be referred to the same actions, abnormal in kind; and we have cause to believe that, under deficient vitality, either from disease or old age, these purely physical processes do often so usurp upon the fabric and functions of life, as to become the causes of death. Equally is it to be presumed, from recent researches of physiology and pathology, that certain diseases have their origin in chemical changes of the blood; either generating morbid agents within itself, or multiplying by an action analogous to fermentation, poisons and morbid matters received into the body. This wonderful fluid, ever in motion and change, and subject at once to chemical laws and to the principle of life, is in itself a mine of future discovery; not to be worked otherwise than by consummate skill and perseverance, but promising results which, as respects both science and human welfare, may well reward the highest efforts of research.—*Quarterly Review.*

**GEOLOGY.**—The surface of the earth is 196,862,256 square miles; and its solidity is 259,726,736,516 cubic miles.

The sea is to the land, in round millions of square miles, as 160 to 40, or as four to one.

The earth is, according to different measurements, 7912, 7916, and 7924 miles in diameter; and about 24,860 or 24,880 miles round.

Those of the ancients who did not believe in the sphericity of the earth, thought it a cylinder, or an extended plane. Homer made it circular, and the outside water, and this was the idea of the Jews. The later Greeks from Pythagoras and Thales taught the sphericity. But the popes believed it a plane, giving all to the west to the kings of Spain.

The surface of the sea is estimated at 150 millions of square miles, taking the whole surface of the globe at 197 millions, and its greatest depth is supposed to be equal to that of the highest mountains, or four miles; but La Place thinks that the tides demand an average depth of three miles, therefore, the sea would contain 450 millions of cubic miles.

The remains of animals and vegetables in the rocks and earthy strata of the earth, are the true and only means of ascertaining its history and natural changes

before the records of man. The discoveries made on this subject within the last half century, form an era in science in which the name of Cuvier will always be distinguished. In all countries, on digging to certain depths, and in mining, the remains of fishes, vegetables, quadrupeds, and birds, are found in the soil or embedded in the rocks, except in those of primitive antiquity. The general regularity with which those that are marine are laid at one level, and those which are products of land are laid at another, and the alternations of these marine and land products, lead to the conclusion that the sea has repeatedly covered the land for long periods of time, and that the land has, at intermediate periods, been dry; and what is very remarkable, the remains found consist, and always at certain depths, of species of animals, vegetables, &c., not now in existence, and often, of genera not natural to the present climate. Cuvier has enumerated several hundred genera of animals, fishes, and vegetables so found, of which there are none of the living genera or species. The lowest rocks, it is therefore inferred, were at one time the surface of the earth, and the seat of organic life. These appear to have been destroyed by some great revolutions which brought new tribes of organized beings, while their kinds prove that the surface was covered with water. The subsequent appearance of amphibia, &c., prove the development of dry land; these appear to have been swept away, and among later solid rocks, the monstrous race of herbivorous quadrupeds and gigantic lacerta came into existence when the earth seems to have acquired herbage for their subsistence. How long this race kept possession cannot be guessed, but their length of life is well known. The gypsum, &c., which now contains their remains is covered with newer deposits, abounding in sea shells, and above that stratum is found a new race of herbivorous animals of the genera of the elephant, rhinoceros, &c., and above them is the first loose soil, intermixed with marine substances, proving second or third immersions of the sea; and above this lies the soil which the present race of animals enjoy. What may yet follow, and when, and how, is a curious question.

In the newest solid rock formations, whales, seals, and birds appear; above these land animals of enormous size, birds, and fresh water shells, all in concrete rocks.

**COVERING METALS WITH BRASS OR BRONZE.**—For Brass, employ a solution in water compound of 500 parts of carbonate of potash, 20 parts chloride of copper, 40 parts sulphate of zinc, and 250 parts nitrate of ammonia; and after scouring the article to be coated, properly, it is put in commotion at the ordinary temperature with the negative pole of *Bunsen* battery, the positive decomposing pole a plate of brass.

For Bronze. Make use of the same preparation and perform in the same manner, as for brass, with the exception of substituting a salt of tin for the sulphate of zinc, and apply bronze to the positive pole instead of brass.

By means of these solutions, wrought or cast iron, steel, lead, zinc, tin, and the alloys of these metals, either with each other or with bismuth and antimony, may, with facility, be coated with brass or bronze, and after having undergone the usual coloring process they equal in beauty the finest bronzes.

When very large surfaces are to be coated, the number of pairs of plates to the battery should be increased. By this method, rough cast iron may be made to assume a very beautiful appearance, and will remain unoxidized when not exposed to the weather. For *outside work* articles should be protected by a coating of suitable varnish.—*N. Y. Farmer.*

## Domestic and Miscellaneous.

### THE ROSE AND THE GEM.

BY A YOUNG LADY BORN BLIND.

If this delicious, grateful flower,  
Which blows but for a little hour,  
Should to the sight so lovely be,  
As from its fragrance seems to me,  
A sigh must then its colour show,  
For that's the softest joy I know;  
And sure the rose is like a sigh,  
Born just to sooth, and then—to die.

My father, when our fortune smiled,  
With jewels decked his eyeless child;  
Their glittering worth the world might see,—  
But Ah! they had no charms for me;  
A trickling tear bedew'd my arm—  
I felt it—and my heart was warm;  
And sure the gem to me most dear,  
Was a kind father's pitying tear.

### USEFUL RECIPES.

**TO PRESERVE GREEN CURRANTS.**—Currants may be kept fresh for a year or more, if they are gathered when green, separated from the stems, put into clean, junk bottles, and corked very carefully, so as to exclude the air. They should be kept in a cool place in the cellar.

**CANDLES.**—Very hard and durable candles are made in the following manner: melt together ten ounces of mutton tallow, a quarter of an ounce of camphor, four ounces of beeswax, and two ounces of alum. Candles made of these materials burn with a very clear light.

**VARNISHED FURNITURE.**—If you wish to give a fine soft polish to varnished furniture, and remove any slight imperfections, rub it once or twice a week with pulverized rotten-stone and linseed-oil, and afterwards wipe clean with a soft silk rag.

**CREAM.**—The quantity of cream on milk may be greatly increased by the following process: Have two pans ready in boiling hot water, and when the new milk is brought in, put it into one of these hot pans and cover it with the other. The quality as well as the thickness of the cream is improved.

**TEETH.**—Honey mixed with pure pulverized charcoal is said to be excellent to cleanse the teeth, and make them white. Limewater with a little Peruvian bark is very good to be occasionally used, by those who have defective teeth, or an offensive breath.

**TAINTED BUTTER.**—Some good cooks say, that bad butter may be purified in the following manner: Melt and skim it, then put into it a piece of *well toasted* bread; in a few minutes the butter will lose its offensive taste and smell; the bread will absorb it all. Slices of potato fried in rancid lard will in a great measure absorb the unpleasant taste.

**TOMATOES PIE.**—Tomatoes make excellent pies. Skins taken off with scalding water, stewed twenty minutes or more, salted, prepared the same as rich squash pies, only an egg or two more.

It is a great improvement to the flavour of PUMPKIN PIES to boil the milk, stir the sifted pumpkin into it, and let them boil up together once or twice. The pumpkin swells almost as much as Indian meal, and of course absorbs more milk than when stirred together cold; but the taste of the pie is much improved.

Some people cut pumpkin, string it, and dry it like apples. It is a much better way to boil and sift the pumpkin, then spread it out thin in tin plates, and dry hard in a warm oven. It will keep good all the year round, and a little piece boiled up in milk will make a batch of pies.

Most people think BRASS KETTLES for washing are not as likely to collect verdigris, if they are never cleaned in any other way than by washing in strong soap suds just before they are used.

**INK SPOTS.**—If soaked in warm milk before the ink has a chance to dry, the spot may usually be removed. If it has dried in, rub table-salt upon it, and drop lemon juice upon the salt. This answers nearly as well as the salts of lemon, sold by apothecaries. If a lemon cannot be easily procured, vinegar, or sorrel-juice, will answer. White soap diluted with vinegar is likewise a good thing to take out ink spots.

**STARCH.**—Frozen potatoes yield more flour for starch than fresh ones. The frost may be taken out by soaking them in cold water before cooking; if frozen very hard, it may be useful to throw a little salt-petre into the water.

**CEMENT TO MEND EARTHENWARE AND GLASS.**—The cement sold about the country as a great secret, is nothing more than *shellac* melted and drawn out into sticks. Heat the article a little above boiling water heat, and apply a thin coating on both surfaces of the broken vessel, and when cold it will be as it was originally.

**ICE IN HOT ASHES.**—A traveller, who lately visited Mount Etna, gives the following account of a phenomenon which struck his notice:—The main crater is about five hundred feet deep at this time, so say the guides; but I think this must be measured down the slope of the funnel. I could not, however, see to the bottom, owing to the volleys of sulphurous smoke whirling up ever and anon, accompanied by a rumbling noise, and occasionally a slight vibration of the ground underfoot. Here I found, amid the warm ashes, on the slope of the crater within, heavy crystals of ice, set all at one angle, and curved like a shark's teeth. I picked up one piece as big as a walnut, and asked the guide if he could account for its presence. Far be it from him to give a "rationale" of anything of the sort; it would derogate from the dignity of Etna. It reminded me of a chemical experiment played off by a French *savant* at one of the late "Scienziati" meetings. He made water freeze in a red-hot cup. The silver or platina being brought to a red heat, a few drops of water are thrown in, which do not evaporate, but jump about. Sulphuric acid is now poured in, which in the act of boiling produces so intense a cold by the disengagement of its latent heat, that the drop of water at once turns to ice. I opine the chemical process here to be the same, only on Nature's grand scale. The morning mists supply the moisture, and within the crater there is no lack of sulphurous mixture boiling as in a retort; hence as hot fumes ascend, the crystals of ice are precipitated. If any one rejects this solution of mine, let him find a better, remembering he is to account for pieces of ice forming on a bed of warm ashes. The principle of "disengagement of latent heat" may also account for the severity of the cold felt on Etna, which is far greater than is due to its elevation.

**STEAM v. THE TURF.**—A good many years ago, one of the toughest and hardest riders that ever crossed Leicestershire, undertook to perform a feat which, just at the moment, attracted the general attention, not only of the country, but of the sporting world. His bet was, that if he might choose his own turf, and if he might select as many thorough-bred horses as he liked, he would undertake to ride 200 miles in ten hours! The newspapers of the day described exactly how "the squire" was dressed—what he had been living on—how he looked—how, at the word "Away!" he started like an arrow from a bow—how gallantly Tranby, his favourite racer, stretched himself in his gallop—how

on arriving at his second horse he vaulted from one saddle to another—how he then flew over the surface of the earth, if possible, faster than before—and how, to the astonishment and amidst the acclamations of thousands of spectators, he at last came in—a winner! Now, if at this moment of his victory, while with dust and perspiration on his brow—his exhausted arms dangling just above the panting flanks of his horse, which his friends at each side of the bridle were slowly leading in triumph—a decrepit old woman had hobbled forward, and in the name of Science had told the assembled multitude, that before she became a skeleton she and her husband would undertake instead of 200 miles in ten hours to go 500—that is to say, that, for every mile “the squire” had just ridden, she and her old man would go two miles and a half—that she would, moreover, knit all the way, and that he should take his medicine every hour and read to her just as if they were at home; lastly, that they would undertake to perform their feat either in darkness or in daylight, in sunshine or in storm, “in thunder, lightning, or in rain”—who, we ask, would have listened to the poor maniac?—and yet how wonderfully would her prediction have been now fulfilled! Nay, waggons of coals and heavy luggage now-a-days fly across Leicestershire faster and farther than Mr. Osbaldestone could go, notwithstanding his condition and that of all his horses.—*Quarterly Review.*

**GOOD ADVICE TO BOYS.**—Be brisk, energetic and prompt! The world is full of boys—and men too—who drawl through life, and never decide on anything for themselves—but just draggle one leg after the other, and let things take their own way. Such people are the dull stuff of the earth. They hardly deserve as much credit as the wooden trees; for the trees do all the good they can, in merely growing, and bearing leaves and seeds. But these drawing, draggling boys do not turn their capacities to profit, half as far as they might be turned; they are unprofitable, like a rainy day in harvest time. Now, the brisk, energetic boy will be constantly awake, not merely with his bodily eyes, but with his mind and attention during the hours of business. After he learns what he has to do, he will take pride in doing it punctually and well, and would feel ashamed to be told what he ought to do without telling. The drawing boy loses in five minutes the most important advice. The prompt, wide-awake boy never has to be taught twice, but strains hard to make himself up to the mark, as far as possible, out of his own energies. Third-rate boys are always depending upon others; but first-rate boys depend upon themselves, and after a little teaching, just enough to know what is to be done, they ask no further favours of anybody. Besides, it is a glorious thing for a boy to get this noble way of self-reliance, activity and energy. Such a one is worth a hundred of the poor, draggling creatures, who can hardly wash their own hands, without being told each time how it is to be done. Give me the boy who does his own work promptly and well without asking—except once for all, at the beginning—any questions. The boy who has his wits about him, is never behindhand, and don't let the grass grow under his heels.—*Farmer and Mechanic.*

**MANAGEMENT OF CHILDREN.**—Love to these children, proceeding from a cheerful, affectionate spirit, I should have perhaps mentioned even earlier. Love leavens the whole. I can hardly bear to treat it as a thing by itself, for nothing can be done without it. It is as the breath in our bodies, and no teaching of yours will benefit the children, if the spirit of love be not there. Consider the relation in which you stand to them. The mother's highest office is yours—from your tone they take their tone; you look around upon their young

and bright faces, and if your heart does not glow with something like a mother's love, you had far better give up your post at once; for useful and respectable as you may be in another office, God and nature will condemn you, if you come to your present work with a cold, uninterested heart.

You will readily acknowledge this—but the difficulty is in applying it; for you may be very anxious to do good and kind things, and yet your self-will and good opinion of your own plans may be more than a match for your love. Many teachers encumber themselves with a number of rules and devices, over and above what they may receive from their employers, which tie their hands grievously, and compel them to lose a hundred little occasions of sympathising and helping their children, because they think they cannot do it without some departure from the strict law they have laid down for themselves. I am aware that on the contrary, some err from the want of rule or system, but I believe this by no means the worst sort of mistake. The spirit of love towards those committed to your care, will manifest itself in your cheerful tone towards them. This is surely very important. If you wear a dull and mournful face, your whole school will be deadened and stupefied. If such be your general tone too, you will probably not be ready when they want your sympathy. What a pity to miss the joy in a child's eye, when she comes to her friendly teacher, full of some little unexpected pleasure! What a loss not to have been her help and comforter in some small grief! Or perhaps the whole school may be under some circumstance either of pleasure or annoyance. Suppose a bitter cold day—you know how poorly they are often clad; now it would be unkind to forbid a complaint or an attempt to warm themselves; better by far to give up every thing else till the grievance is abated. Set the example of stamping, clapping and rubbing of hands and faces; your sympathy will warm them as much as the exercise itself. Or if they are in a merry mood (for joy spreads like wildfire) let it have vent for a few moments. Your giving way for a short time will make the necessary restraints that follow the easier. Let them sing little cheerful songs, provided you can bring them into pleasant tune and time, which certainly requires patience, and to be made in some degree a pursuit, but richly rewards by the soothing and refining effect it has upon the school.

I should not feel that this part of the subject, that I mean of a cheerful and loving spirit towards the children, had been fairly dealt with if I did not allow to the teacher that her employment is a very wearing one, and that the more conscientious she is, the more will she be in danger of suffering from anxiety, from disappointment from promising children turning out ill, from the unreasonableness of parents, and sometimes I fear from the same fault in her employers. Under the pressure of these things, and from the constant confinement, bodily strength flags; health is apt to give way, and then you grow nervous and wear a careful cloudy brow. You must check this as far as the evil, coming from your own minds, admits of a check. PREPARE well for the duties of your day. A few minutes' calm thought, a heartfelt prayer for yourself and the children, will do more than any thing else in soothing you and setting you off aright. Dwell much upon mercies and blessings, and try calmly and thankfully to believe that if you put your trust in God, all things will work together for good to you and to your charge. There may be a danger of attaching too much importance to yourself as an instrument in that work. Better to indulge any thought of this kind very sparingly, or, (besides other evils), you may fall into the habit of looking forward too much, whereas you will act with greater freedom and simplicity, if you endeavour to take the work of the day in the day, only petitioning for your

daily supply of help and strength, and when it is over quietly letting the thoughts of it go. Health, however, with all the rational care we can take of it, will fail sometimes, and then many teachers give up at once. I think they often err here. Though under much weakness, perhaps pain, it may be difficult to do one's duty, there is some help afforded by experience of bodily affliction; I do not speak of constant sufferings and hopeless weakness, but of occasional infirmities, more or less frequent.

Now with regard to these, personal endurance softens the spirit and makes it compassionate and grateful for small attentions. No teacher can fairly reckon much indeed upon the forbearance of a school of giddy children; in these cases the only possible way to get on is to think as little as you can of yourself, and many a fine lady might be cured of mental and bodily disease by the outward calls made upon you. *This* I can tell you for your comfort, that some of the most admirable teachers I have ever known, those who have exercised the best influence over their scholars, have been persons of weakly, in some cases of bad health. It seemed as if the strong efforts which they put forth to prevent the appearance of suffering had an invigorating effect upon their whole characters, and enabled them to do what individuals less skilled in patience and fortitude never would have done. May it not be reckoned among the benefits which are sometimes drawn from trouble of this kind, that if there has been any natural disposition to lightness, any want of true sobriety of spirit, it may very likely be remedied in *this* school of affliction. You must not indeed wait for such trial, in order to be raised above levity of manner and improper behaviour, especially towards the other sex—but you may be thankful if you are not left to be tempted by high spirits and unbroken ease.

In your character, then, integrity, humility, love to the children, and a sober, serious spirit should prevail, and be manifested in your government. Of course as a beginner, all these qualities will require the greatest watchfulness, and cannot be maintained without the use of the appointed means. These and many other qualities must be put forth if you have any true desire to do your duty, whatever may be the plan adopted in the school, or whatever the superintendance to which you are subjected, and for this reason I shall finish what I have further to say respecting the general spirit of your government, before I touch on any particular plans.

There is one caution I would venture to give you with regard to the mere knowledge communicated in your school. By no means undervalue the children's learning, but yet look more to the spirit in which knowledge is conveyed than to the knowledge itself. It is a very common mistake which is made by young men and women a little advanced before most of the young men and women of their own class, that they are apt to value their acquirements too highly. They think learning is not merely "better than house or land," but better than temper, better than health, better than a sound mind and strong body. Do not take up such absurd notions as these, for depend upon it, these acquirements, if not given in the right spirit, are, I will not say useless, but by no means of that high value which some people think. Observe, I do not even except religious knowledge, when I speak of the possible overvaluing of learning; indeed you may do but little good by adopting certain ways of imparting religious instruction. You may cram a child's head full of scripture facts and scripture doctrines, without in the least advancing it in the way of personal religion. There is such a thing as a teacher fancying she has discharged her conscience and done her duty by a child, because she has scolded it (if we may so say) in the language of scripture, unmindful all the time of the spirit in which she has ventured to use such sacred weapons. This is indeed so gross a decep-

tion, that it may be hoped it is not very common—but still I fear many teachers are hardly aware of the caution required in quoting scripture, or of the presumption of using it in an unholy, unkind spirit. Some persons will fling a text at you, as if it was their own property, to use or abuse as they please. And there are others, kinder and milder, who do not so: but who overload children's memories with what they can neither understand nor apply. Now I do not say that children are to learn nothing but what they can *directly* understand. Something must be laid up in the mind's storehouse for future use, and it is in the experience of many people that what was not quite intelligible when first learnt, explains itself as we proceed. Children must trust us and learn with patience what now may seem dull and uninteresting, which is no more than we ourselves often do from a sense of duty—the only difference being that their weaker will requires more of the aid of authority. This however may be fully admitted, and the principle acted upon, and still caution be observed in not doing so much with a view to the future, as that the mind is injured thereby for the present time. With very young children in particular, you should not so much regard the quantity they have learnt by rote, or the fluency with which they are beginning to read, as whether their whole minds seem to be awake and alive—whether they can really see and give a just account of any object or fact that comes before them. I cannot help observing here how important a point is this which has just been touched on. How many people there are who seem never sure that they have seen or heard correctly, yet who go on all their lives spreading reports of things that may affect the character or prospects of hundreds of their fellow-creatures! How difficult it is to come at the exact truth respecting even a fact which happened in the next room! Why? because the people who give an account of it have not been accustomed early to state things plainly, exactly and simply; because they do not feel the importance of accuracy; of seeing and stating what *is* or is *not*. Lawyers and jurors, who know that the lives of human beings often depend upon the exactness of a principal witness on a trial, can tell you how much good you may do, if you are so happy as to teach your children this regard to correctness in small things. Never neglect it in yourself—never pass over a little exaggeration or misstatement in your scholars. Do not treat it as a willful lie, or threaten, or punish them unless it grows to a very serious height, but endeavour to inspire them with *love* of simple truth; have an approving word ready for the child who gives you the most correct account of its doings, or of any thing it has seen or heard, and let that child have the pleasure of feeling that your reliance on her truth is strengthened—that you can trust it another time.—*The Schoolmistress, by Emily Taylor.*

**DINNER OF THE MESSRS. RANSOME TO THEIR WORKMEN.**—These celebrated English implement makers, (of one of whose ploughs we gave an engraving in our January number,) gave a splendid entertainment to their work-people at the commencement of the year. Fifteen hundred persons—including visitors—sat down to a sumptuous dinner, in a commodious building, richly and most tastefully decorated for the occasion. This firm has been in existence at Ipswich for upwards of sixty years, and the festival was held in celebration of an enlargement of the works. Upwards of eleven hundred people are employed in this establishment, so honourably known for the superior character of its productions, as well as for the strict integrity of its extensive transactions.

**THE BEST BREED OF SHEEP.**—Let it be assumed, that the best breed of sheep is that which produces the greatest net profit in money from a given quantity of food,

**LIMESTONE WATER.**—It is well known that in those regions of country where limestone abounds, the water is so strongly impregnated with it (making it too hard as it is called), as to render it unfit for washing, and many other domestic purposes, by curdling with the soap—encrusting boilers, &c. Where no other water is to be had, the disagreeable effects may be remedied in some degree, by the following means:—

For washing, the curdling of the soap in the water can be prevented, by boiling a bag of wood ashes in the kettle, which will not hurt the hands so much as ley made in the common way. For cooking, saleratus, in the proportion of about one small tea-spoonful to a gallon of water, will neutralize it sufficiently. For the toilette, its effects upon the skin are sometimes very distressing. I have often known the hands of children, as well as those of other people, so chapped by it as to crack open and bleed. This may be prevented by washing with vinegar, after the hands, &c., have been wiped dry.—*American Agriculturist.*

**BEWARE OF THE RING BONE.**—If colts stand on a plank or any hard floor that is not well littered, they will be subject to the ring bone. When breeding horses, we left the floor of the colt's stables of the soil over which they were built. If this should be a deep loam, or of a clayey texture, then remove the soil about two feet deep, and replace it with sand, or the finest gravel to be obtained. Colts should always be let out to exercise in a yard, or open space, every day, during the winter, when not particularly stormy; and in this yard there should not be older horses, or any horned cattle which can do them injury. Being very playful, they are more apt to provoke attacks upon them than other animals.—*American Agriculturist.*

**HOW EMIGRANTS SHOULD SETTLE.**—The way is to go and set yourself down among the natives. They are already settled. They can lend you what you want to borrow, and happy they are always to do it. And, which is the great thing of all great things, you have their women for your women to commune with.—*Cobbett.*

**COLONIAL PRICES.**—Sydney: Wheat 4s. 9d. to 5s. 6l. a bushel; bread, 3d. to 3½d. the 2lb. loaf. Maize, 1s. 10d. to 2s. per bushel; potatoes, from £3 for the best colonial, to £4 10s. Horned cattle, £2 15s. a head, being a rise of 7s. 6d. a head; sheep, 5s. 6d. to 6s. 6d.; horses, from £3 to £19, average about £8; pigs, 2d. to 2½d. per lb. Dairy produce: Five tons of butter paid market dues in the week, sold at 8d. to 10d. per lb.; four tons of bacon, 3½d. to 5d.; four tons of cheese, 34d. Poultry: Turkeys, 6s. 6d. to 6s. 9d.; ducks, 2s. 3d. a pair. Fuel: coals, 18s. per ton; wood, 5s. per ton. Among the importations coastwise are 150 doz. oranges from Hawkesbury, six cases from Brisbane Water; lemons, 300 doz. from Hawkesbury.

**GOLD MINES IN ENGLAND.**—While we have American returns of gold mines in California, and mineral riches abroad, we are well pleased to find that at home parties do not lose sight of the precious metal. It is well known that our metalliferous rocks and lodes yield gold and silver, although, in most instances, too minute to render them of any commercial value, and, generally speaking, being found in the gossans. It is now some months since that attention was directed, through our columns, to the produce of gold in Merionethshire; and although the question may be open as to whether the sovereign is obtained minus or plus the value, yet the fact has been elucidated that the mineral lodes in North Wales yield gold, a bar of which weighing 3lb. 7 oz. has been placed in our hands, as the product of the Cwm-hesian Mine, near Dolgelly. The mine is worked

for lead, and the lode is represented to us as being "interlaced" with strings of gold. Some six or seven pounds of the precious metal have been obtained, and the ore at Bank will, we are informed, yield at least 200 oz. of gold. We merely mention the circumstance with the view of directing the attention of our readers to the subject.—*Morning Journal.*

**TO MAKE GOOD BUTTER IN WINTER.**—We often hear the complaint that butter made in winter is poor. Ours was so for several seasons. It was very slow in coming, and frothy, white, and sometimes bitter; while butter made from the same kind of milk in the warm season was good. I devised many plans for improvement, such as throwing in salt, warm milk, scalding cream, &c.; but to no purpose. At length I scalded my milk when brought from the cow, afterwards setting it in either a cold or warm place as most convenient. I mean, I communicated sufficient heat to my milk to destroy the effect which frosty feed in autumn or dry feed in the winter had upon it. Since which time we have made, with fifteen minutes' churning, purer, sweeter and more yellow butter than we ever made in summer—and sometimes from the frozen cream gradually warmed. And were it not that the increase of manufactures, the pursuit of fashion, and other causes combined, render helping hands in the dairy-room now-a-days very scarce; I should be at the trouble of scalding my milk before setting it during the summer, as well as in winter; for surely, butter made in this way possesses a delicious richness and dryness which cannot be found in any other.

*Farmer and Mechanic.*

A HOUSE-KEEPER.

**HOW TO COOK VEGETABLE MARROWS.**—Cut the marrows into short pieces; take out all the pith and seeds, and boil them in plenty of water, with salt.—When well boiled scrape out all the marrow, then mash it well, adding salt, pepper, and a little butter; it is then a dish fit for any table. The marrows may be sown about the first week in May, in the open ground in a warm corner; when transplanting time comes, the early potatoes will not be near ripe; but a root of potatoes is to be lifted every six or eight feet apart, in every sixth or eighth alternate row, and the marrow to be inserted in the place. I find that when thus planted in moderately rich land, I can grow 20 tons of marrow to the acre easily; and when ripe they can be stowed away anywhere and will keep good for a very great length of time. In addition to their utility as a vegetable for the table, they form a most economical and excellent article, when boiled, for fattening pigs.—*JAS. CUTHILL, Florist, of Camberwell, Nov. 2.*

**EMIGRATION AND COLONISATION.**—"Ma," said a young lady to her mother the other day, "what is emigration?" Mother: "Emigration, dear, is a young lady going to Australia." Daughter: "What is colonising, Ma?" Mother: "Colonising, dear, is marrying there and having a family." Daughter: "I should like to go to Australia."

**EFFECT OF RAILWAYS ON THE VALUE OF LAND.**—It is estimated in New England that for three miles on either side of a railroad, the agricultural lands have advanced ten dollars per acre since these iron avenues to market have been opened.

**LARGE POULTRY.**—At a show held in England, under the direction of the late Earl Spencer, the following were the dressed weights of some of the poultry exhibited: The best turkey weighed twenty lbs. 4 oz.; aapon, 7 lbs. 14½ oz.; pullet, 6 lbs. 3½ oz.; goose, 18 lbs. 2½ oz.; couple of ducks, 15 lbs. 10 oz.

## Editors' Notices, &c.

**A CANADIAN.**—We will, if possible, comply with your request in our next. A description in detail of hop culture would require much space. If you think of planting this spring, seize the earliest opportunity to plough the ground as deep as possible; if subsoiled it will be all the better, and have your cuttings in readiness.

**AN AMATEUR.**—Your enquiry respecting the best kinds of gooseberries adapted to Canada, we will submit to one of our horticultural correspondents. The same to

**J. C. B.**—in reference to apples and the management of fruit trees. In the mean time we direct his attention to an article on transplanting in the present number.

**J. S.** will see that we have already anticipated most of his suggestions. We have no space for lengthened tales and light literature. Most of our readers have little time to spend in such kinds of reading—they want something practical and substantial. An occasional short article, however, on the classical antiquity of husbandry—its historical progress—the poetry and natural theology of rural life and affairs—would be highly acceptable.

**M. M., Etobicoke.**—Your marl contains a sufficient quantity of lime to pay for digging and hauling to a moderate distance. It is a valuable manure for general purposes. We intend going pretty minutely into the question of manures hereafter in our scientific series of papers.

**W. P. N., Elora.**—It would afford us much pleasure to publish your communication, accompanied with a cut of the wheel, &c., but as you have not secured your patent in the United States, such a course might prove disadvantageous to you. Indeed, you request us not to put it in the power of any cute "Yankee" to steal your invention; how then can we insert your description of it, or go into an explanation of its principles ourselves? To make any general remarks, without stating the principle on which the wheel is driven, would convey no information to our readers. If you wish any explanation of your invention to go before the public, you had better file your specifications and make claim for a patent at Washington, as soon as possible, and then you need not apprehend any danger. It will cost from \$600 to \$800 to complete your patent in the States. We were informed by Sheriff Ruttan, that it had cost him the latter sum to receive a patent for his invention in Ventilation. For a small sum, however, you can file your papers, and thus secure your invention from being pirated. Our terms are 4d. a line for advertisements.

**J. S. M., Montreal.**—Received. We are glad to find persons in your situation taking an interest in our publication.

**J. P., Cornwall.**—This is the first instance we have heard of a post-master *refusing* so small a favour to the *Agriculturist*. If our paper were a *party* organ, or a mere private enterprise, we should not be surprised to find post-masters disinclined to step out of the way to advance its interests. But when every man of sufficient intelligence to keep a post-office, and of sufficient honesty to be entrusted with one, must see and admit the great benefit a well-conducted agricultural journal is calculated to effect in a country so exclusively agricultural as ours, he does not display much public spirit, or a very peculiar fitness for his situation, who, as post-master, refuses the slight assistance of receiving and enclosing a subscription for such a paper. We are greatly pleased to know, that the post-office department will soon be under the controul of the provincial legisla-

ture, when disobliging and unfit persons will be likely to find themselves relieved from those duties which they seem to consider a bore. In the mean time we must do without the attention of Mr. Wood, the *Cornwall* post-master. Our paper brings a revenue of between 150*l.* and 200*l.* per annum to the post-office; and apart from the advantage to the country of such a publication, it strikes us that the officers of this department should be the last to throw any obstacle in its way.

**W. S. B., Trafalgar.**—You should have enclosed your subscription for this year also. Please read our terms.

**W. F., Brockville.**—Your favour was too late for this number. We shall find a place in our next. You need not mind returning the extra copies, as we have more of that number than we require.

**W. O., Preston.**—You mistake our meaning with regard to paying postage. It was on the letter enclosing a *dollar*, where the person sending it is entitled to the paper for 3*s.* 9*d.*, that we proposed to pay postage, and *not* on the papers during the year.

**A. D., Raleigh.**—Your name is on our list, and the papers have been sent to you in the same way as to others. If you have not got them, we have done all that we can do. You speak of paying postage, &c., but if you did not get your papers, we are at a loss to know how you paid postage on them; and as to your letter of complaint, you took care to make us pay that.

**W. H. A., Port Hope.**—We have sent the number of copies you request, except to those whose names were already on our mail book; and as the 1st and 2nd numbers *have been* addressed to these persons, and as we shall require all our surplus copies of the first three numbers for our new subscribers, we cannot afford to send *duplicates*. The amount due us, treating your society as if it had taken the same number of copies last year, will be £10. 6*s.* 10*d.*, which you can enclose in a letter—a simpler mode than that you suggest.

The latest intelligence from England (February 10), represents the grain market as firm; but quotations are low, with little hopes of much improvement, as stocks are very large, and daily increasing from importations. The corn duties have now ceased, and the British market is equally open, free of duty, to all the world. Lord John Russell, at the opening of Parliament, expressed the determination of his government to resist any return to a duty on foreign corn. A few days will determine the fate of the Canada Reciprocity Bill, at Washington. We learn from several correspondents, that the sowing of wheat in the British Islands was completed under more favorable circumstances, than from the excessive wetness of the weather it was at one time anticipated.

### TORONTO MARKET.

		FEBRUARY 28, 1849.	
Flour, per barrel of 196 lbs. ....	13 0	@	21 0
Wheat, per bushel.....	3 9	@	4 6
Potatoes, per bushel.....	2 6	@	3 0
Pease, per bushel, 60 lbs.....	1 8	@	2 0
Oats, per bushel, 34 lbs. ....	1 0	@	1 2
Bacon, per cwt. ....	23 6	@	27 0
Hams, per lb.....	0 3½	@	0 4
Butter, in kegs, per lb. ....	0 6	@	0 7
Butter, (fresh) per lb. ....	0 7½	@	0 9
Pork, per 100 lbs. ....	15 0	@	21 0
Beef, per 100 lbs. ....	12 6	@	17 6
Turkeys, each .....	2 0	@	3 0
Fowls, per couple .....	1 0	@	1 3
Eggs, per dozen.....	0 7	@	0 9
Hay, per ton .....	45 0	@	60 0
Straw, per ton .....	25 0	@	30 0

FRUIT AND ORNAMENTAL TREES.

1849.

**PUBLIC** attention is invited to the extensive and well-selected assortment of *Fruit and Ornamental Trees*, grown at the **TORONTO NURSERY**, for sale in the ensuing Spring. Persons about to plant Trees are respectfully requested to visit the grounds and examine the stock, which, for extent and variety of large, well-grown, healthy Trees, of the most approved varieties, now equals any establishment of the kind between this and New-York. The grounds now contain more than Twenty Acres, planted with all descriptions of Nursery productions.

**FORTY THOUSAND APPLE-TREES,**

and upwards, four and five years from the graft, are now ready for sale, with a proportionate number of the most desirable sorts of Pears, Plums, Cherries, Peaches, Nectarines, and Apricots. Also, Grape Vines, Gooseberries, Currants, Raspberries, Strawberries, Rhubarb, and Asparagus Roots. Many of the finest varieties of Pears may be had on Quince stocks, now so much esteemed for garden culture.

The collection of Ornamental Trees, Flowering Shrubs, and Hardy Roses, is quite extensive, and contains all the hardy varieties suitable for Pleasure-Grounds and Shrubberies. Also, a large stock of Dahlias, Herbaceous and Green-house Plants.

The supply of Hedge Plants is also worthy of special notice. Upwards of 100,000 plants of English Thorn, Privet, &c. can now be furnished.

Nurserymen commencing business, in want of Specimen Trees and Plants, and persons purchasing in large quantities to sell again, are supplied on liberal terms, and will find it to their advantage to give this Nursery a call.

Trees grown here are better adapted to the Canadian climate than those brought from the South. Trees sent out by boats or other conveyances are invariably freshly dug, and many Farmers can have them taken up and put in their own wagons while on the ground, thereby avoiding all risk of failure after transplanting.

A new Descriptive Catalogue, containing directions for successful Transplanting, has lately been published, and is furnished gratis to all post-paid applications.

Orders from a distance, accompanied by a remittance or a satisfactory reference, will be promptly and punctually attended to. Articles sent out are correctly labelled and securely packed, to secure safe transmission to any part of the Upper and Lower Province.

GEORGE LESLIE. 1

January, 1849.

*By Her Majesty's Royal Letters Patent.*

**BUTTER'S PATENT**

**BRICK AND TILE MACHINE.**

**T**HIS Machine grinds the Clay and moulds the Brick directly on the pallets, by Horse Power, and delivers them ready to be put into the hack or pile, making from 25 to 35 per minute, according to the length of the lever the horse is attached to, thereby saving 75 per cent. more manual labour than any other machine extant. Terms made easy. Orders promptly attended to, and Machines set in operation in any part of the Province. For further particulars apply to Mr. Thos. Anderson, Yonge Street; Mr. Wm. Groves, Richmond Street, Toronto; or Mr. Henry Beck, Builder, No. 11, Richmond Street, Toronto.

Jan. 1, 1849.

THE TORONTO

**Carriage and Light Waggon Manufactory,**

130, KING STREET WEST,

(Established—1832.)

**OWEN, MILLER & MILLS,  
FROM LONDON.**

**E**VERY description of Carriage, Light Waggon, and Sleigh, kept on hand for sale, and built to order, of any pattern.

Painting, Trimming and Repairing, done in the best manner, on reasonable terms, and with the utmost despatch.

For Sale—Lace, Patent and Plain Axletrees, Springs, Lamps, Bands, Patent Leather, and other Carriage Trimmings.

January 1, 1849. 1

**NEW CARRIAGE FACTORY.**

**WILLIAMS & HOLMES,**

**H**AVE REMOVED their *City Carriage Repository*, to 142, YONGE STREET, where they have started a Manufactory in all its branches. Parties wishing to purchase for Private or Public Business, are requested to give them a call before purchasing elsewhere, as their facilities are such as to enable them to manufacture cheaper than any other Establishment in Toronto.

Toronto, January 1, 1849.

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N.B.—The public are particularly invited to an inspection of their Lumber and other Building Materials, as none but the very best will be used.

CANADIAN

**PATENT HEMP, FLAX, & OIL MILLS.**

**NOTICE TO FARMERS.**—Wanted to purchase, for Cash—

- 10,000 Bushels Flax Seed
- 1,000 Acres Hemp Straw.
- 1,000 Acres Flax Straw.

The Proprietors of the above establishment having secured by Royal Letters Patent the invention of an entirely new process, especially adapted to this country, for the preparation of Hemp and Flax, hereby give notice, that they are now ready to enter into engagements, to an unlimited extent, with all persons wishing to sow the same. Those parties willing to contract for the ensuing season, will please make application at once to the Proprietors, either at the Works, opposite the Deer-Park, on Yonge-Street, or at the Office, No. 22, Wellington Street, Toronto.

McGEE & DEW,  
Proprietors.

January, 1849. 1

**SHOE AND LEATHER STORE.**

**D**ANIEL FARAGHER begs to inform his friends and customers, that he has opened a *Shoe and Leather Store*, at No. 22½, Yonge Street, Toronto, where he will be prepared to furnish all kinds of work in his line at the most reasonable prices. Having a Tannery of his own in active operation, he can supply the Trade and others with as good an article of Leather, and at rates as low as can be obtained elsewhere.

DANIEL FARAGHER.

Jan., 1849.

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NOTICES OF THE "AGRICULTURIST," BY THE PRESS.

We give below a few of the many favorable notices of our journal by the provincial press. We thank our cotemporaries for their good wishes, and are happy to find that among so many, representing different interests, and embracing every variety of political opinion, but *one* paper has said a word in disparagement. The reason, or rather the want of reason, for this, was exhibited in our last number. It may be some satisfaction to the well-wishers of the *Agriculturist* to know the feelings of the press generally towards it, and we therefore select the following for that purpose:—

CANADIAN AGRICULTURIST.—We regret we had not received No. 1 of this most excellent journal earlier than to-day. We shall fully notice its *real worth* in our first re-issue; meantime, let farmers and all others apply to us personally, and we shall exhibit and point out its merits; and if they don't subscribe, we shall say *we wonder!* The original articles on "The application of Science to Agriculture," and on "Domesticated Animals of the Farm," are worth more than the price of the journal. The art and science of farming is neatly recommended to notice in the article titled "The pleasures and happiness of a Farmer's life." The work, containing woodcuts, is now published in bookshape, and at the end of the year will form a large, handsome and most useful volume.—*Oxford Star*.

CANADIAN AGRICULTURIST.—The first number of this neatly got up magazine is now before us, and we recommend it to the patronage of our agricultural friends. A large proportion of the present sheet is original, comprehending much useful information in a popular form, and the extracts are made judiciously and with taste. The illustrative woodcuts, likewise, are entitled to a high meed of praise, and, on the whole, we have not met with a periodical of the class, more deserving of an extensive circulation. We may add that the *Agriculturist* is edited by Messrs. Buckland and McDougall, is neatly printed by Messrs. Rowsell and Thompson, and contains thirty-two pages—the subscription being 5s. per annum.—*Streetsville Review*.

THE CANADIAN AGRICULTURIST.—We notice, with pleasure, the first number of a new series of this periodical. It now appears as an 8vo of 32 pages, monthly, at \$1 a-year, published in Toronto, by Messrs. George Buckland and William McDougall, and is very well got up, both editorially and mechanically.

The cultivation of the soil, and the care of stock, are such delightful occupations, besides being the main-stay of our prosperity, as a country, that one magazine on these subjects, in Canada West, ought to secure a subscription list sufficiently large, to enable its publishers to issue a first-rate work. We are somewhat aware of the difficulties they have met with, but we trust they are in a great measure overcome, and that they will have an opportunity of devoting themselves to their excellent undertaking with such energy as to produce a monthly every way worthy of the cause, and which will challenge a comparison with similar works in any other country.—*St. Catherine's Journal*.

We have received the January number of the *Canadian Agriculturist*, an excellent and well-conducted monthly, published at Toronto by Messrs. Buckland and McDougall, at the low rate of \$1 a-year. The number before us is the first, and it is a good specimen. It is devoted to agriculture, mechanics, general science, horticulture and domestic economy; and believing firmly that such a publication is calculated to do a vast amount of good, if properly supported, we commend it to the attention of our agricultural friends; a dollar cannot be turned to better account.—*Ottawa Adv.*

The *Agriculturist*, of Toronto, has put on altogether

a new appearance. No. 1 of the new series now lies before us; and if it is to be taken as a fair sample, we have no hesitation in saying that it is the best agricultural paper yet presented to the Canadian public. A large proportion of this number is filled with original and very interesting matter. Its principal Editor is Mr. George Buckland, Secretary of the Provincial Agricultural Association, an English gentleman who has recently made Canada his home, and who, we understand, combines good literary and scientific abilities, with long experience and a practical acquaintance with the subject to which he has devoted himself. \* \* \* We sincerely hope so useful a publication will be well sustained by that large and useful class of our population for whom it is more particularly designed.—*Pictou Sun*.

THE CANADIAN AGRICULTURIST.—The second number of this periodical, which we have perused with some attention, fully bears out the opinion we formerly expressed of its merits. Beyond all question, it is the best edited agricultural paper which has yet appeared in our Province, and can hardly fail to be productive of important benefits to the class for whose use it is more immediately designed. In the original articles we recognise a judicious blending of science and practical experience, whilst the selections prove that the best sources of information, European as well as American, are at the command of its conductors. Once more we heartily commend the "Agriculturist" to the attention of the farmers of Canada, assuring them that by a careful study of its pages, they will be enabled greatly to increase the productive resources of their adopted land. We must not omit to mention, that Mr. Buckland and his co-editor deny, in the most pointed terms, that their journal is characterised by aught of a political nature,—and most assuredly we have been unable to detect, in the numbers already published, one expression or allusion which could justify the charge of partizanship, so rashly made by one of our city cotemporaries.—*Church*.

THE CANADIAN AGRICULTURIST, a continuation of the *Cultivator*, is now under the editorial charge of Mr. Buckland, assisted by Mr. McDougall. It is well got up, and contains a variety of matter of the greatest interest to the Canadian farmer. Having handed the first number to a friend who takes a particular interest in agricultural matters, he has sent us a brief notice of the *Agriculturist*, which will be found above.—*Chronicle & News*.

[The very flattering article to which the *News* refers, and for which we thank the writer, is too lengthy for this place, or we should gladly insert it.—Eds.]

THE CANADIAN AGRICULTURIST.—The first number of this very useful agricultural journal, for the year 1849, has come to hand, and it is, without exception, the best work of the kind printed in the Province. It is greatly improved in appearance and looks well. We would recommend it to the agriculturist as a work of much importance to that class of the community. It is published at the low rate of one dollar per year. We regret that the crowded state of our advertising columns precludes us from inserting the Prospectus for this year.—*Brantford Courier*.

Our neighbours on the other side of the line have given considerable attention to Agricultural publications, but hitherto we have done little in this respect. We, therefore, hail with pleasure the appearance at Toronto of the *Canadian Agriculturist*, a publication, which, if carried on with the same zeal and talent with which it has been commenced, will leave the Canadian public nothing to desire. The original articles shew great knowledge and skill in handling the subjects, and the arrangement and selections, a most practised judgment.—*Montreal Gazette*.