

Technical and Bibliographic Notes / Notes techniques et bibliographiques

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

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

Coloured covers/
Couverture de couleur

Coloured pages/
Pages de couleur

Covers damaged/
Couverture endommagée

Pages damaged/
Pages endommagées

Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée

Pages restored and/or laminated/
Pages restaurées et/ou pelliculées

Cover title missing/
Le titre de couverture manque

Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées

Coloured maps/
Cartes géographiques en couleur

Pages detached/
Pages détachées

Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)

Showthrough/
Transparence

Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur

Quality of print varies/
Qualité inégale de l'impression

Bound with other material/
Relié avec d'autres documents

Continuous pagination/
Pagination continue

Tight binding may cause shadows or distortion along interior margin/
La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure

Includes index(es)/
Comprend un (des) index

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

Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/
Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

Title page of issue/
Page de titre de la livraison

Caption of issue/
Titre de départ de la livraison

Masthead/
Générique (périodiques) de la livraison

Additional comments:/
Commentaires supplémentaires:

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

10X	14X	18X	22X	26X	30X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12X	16X	20X	24X	28X	32X

THE ONTARIO FARMER,

A MONTHLY JOURNAL OF

Agriculture, Horticulture, Country Life, Emigration, and the Mechanic Arts.

VOL. II.

HAMILTON, MARCH, 1870.

No. 3.

IGNORANCE THE GRAND HINDRANCE TO SUCCESSFUL FARMING.

CONTINUING our extracts from Professor Buckland's Address, before the New York State Agricultural Society, we come now to a passage on the above subject which is well worthy of a most attentive reading:

"Let us look at this matter for a few minutes in a familiar manner. Let us ask ourselves the question, *What is Agriculture?* and try to answer it as briefly and accurately as we can. Agriculture, it may be said, is the art of cultivating the soil for raising crops for the sustentation of man and animals. Now, who that reflects on what is involved in this short answer, can come to the conclusion that any man, provided he has powerful muscles, can make a farmer?

"The first thing that might strike the attention of a reflecting person, in the above definition, is the little word, '*soil*,' a term expressing not a simple, but an extremely complicated substance, comprising a variety of materials, in different chemical and mechanical conditions. In travelling through any considerable area of country, you pass over a diversified surface, composed of different soils, from the disintegration and commingling of the various underlying rocks, differing in some instances very widely from each other in chemical composition, and mechanical and hygrometric properties. To acquire what may be termed only a practical knowledge of soils, a life observation and farm-experience is required; and if we desire a minute and accurate acquaintance with particulars, on which much of success or loss in practice may depend, we are compelled to invoke the aid of the chemist and the geologist. The soil is a very complex thing, susceptible at the hands of man of great improvement, or, as is unhappily sometimes the case, of great deterioration; and no cultivator, however advanced his practice, or minute and extensive his observation, can obtain the maximum of profit and sustain the fertility of his land, without an acquaintance with those facts and laws, in relation thereto, which science has investigated and can alone explain.

"Again: The soil, air, and water contain all the constituents which the farmer by means of *cultivation* elaborates into crops, and it is from the former alone that they obtain their mineral or inorganic portion. Now mark what is implied by this single word, *cultivation*. It involves, of course, the use of tools, implements and machines, the efficiency of which mainly depends on their mechanical adaptation to the various kinds of soils, as regards texture, density, and relation to warmth and moisture, and also to the habits and special requirements of different crops. Between implements and machines constructed on the most approved principles of modern mechanics, and successful and profitable farming, there is an intimate and indissoluble connection. Take only that important and primitive symbol of husbandry, the plough, and, without going back to Egypt or the ancient Romans, compare, or rather contrast the implements that were in general use in Europe and on this Continent less than fifty years ago, with those of the present time, and you perceive at once how much depends upon the employment of such implements as are in their form and construction in accordance with the laws and well-ascertained formulas of mechanical philosophy.

Further: The farmer cultivates the soil for the exclusive purpose, in the first instance, of raising crops; in other words, such vegetable productions as are best suited to the soil, climate and markets. He ascends from the dead mineral earth to the living organized plant. A tiny seed is deposited in the earth, and under the influence of warmth and moisture germinates, assimilating materials from both the air and soil in the progress of growth, and after passing through a wonderful cycle of changes, reaches the condition of a perfect plant, ripens its seed, and thus secures the perpetuity of its species. Here he is brought directly in connection with the higher teachings of Chemistry and Vegetable Physiology.

The farmer has yet a further and higher Object: he raises plants for the sustentation of animals. This is the great and ultimate end of all agricultural operations. What a beautiful view is here

opened by the the ordinary routine of the farmer's daily life, of the intimate connection between what are termed the three great kingdoms of Nature! The animal could not exist without the vegetable, which in its turn depends upon the mineral. Thus he ascends from the dead earth to the living plant, on which is nourished the living, moving and sentient animal! In the breeding, feeding and general management of his stock, the manner in which these operations are conducted may be regarded as an unerring index of the state and progress of agriculture; and much of the success of the practical man will depend on the extent and correctness of his knowledge of the principles of Zoology and Animal Physiology.

Now, will it be maintained that agriculture is so simple a thing that any youth, however feeble his mind and sluggish his mental habits, can readily be made into a farmer, and that to engage in this pursuit, but little special information or training is needed, but simply a large expenditure of muscular force in accordance with a certain time-honored routine? This, unhappily, has been the prevalent feeling of the past, and it is still too much so at present; and I repeat, that it is to this low and fallacious estimate of the nature of agriculture and the qualifications of its pursuers, that much of its complained-of slow progress is attributable. We must rouse ourselves so as to take higher and wider views of this great art, which, instead of being the simplest, is one of the most difficult and complex, as it is unquestionably the most valuable, of the various industries of this brief and busy life.

I am aware that many fallacies have been committed by persons of sanguine temperament, earnestly desirous of correcting this low and degrading estimate of agricultural pursuits, by too strictly comparing its actual progress with that of some other arts. In order that comparisons may not be invidious, it is necessary they should be correct. It should be borne in mind that the marvelous progress made during the present century, in the cheapness and increased productions of textile manufactures, bleaching, dyeing, calico printing, etc., is in great measure due to the application of inorganic chemistry and improved machinery; the former science having attained to extraordinary development and exactitude during the past fifty years. The aid which chemistry renders the farmer, relates chiefly to the nutrition and growth of vegetable and animal life, termed organic, a department of the science having as yet but a very brief history, and the pursuit of which is beset with many and peculiar difficulties, and is subjected to rapid changes as in the progress of discovery, past errors become corrected and new truths established. The manufacturer, by availing himself of the certain aids of a more simple and advanced department of chemistry, and operating exclusively on dead matter, under well-defined physical conditions of temperature, light, moisture, etc., is placed in a

position almost absolutely to command whatever results may be desired. How different is it in these respects with the farmer, whose operations are exposed to and influenced by the uncertainty and variations of the weather, the changes in the natures of soils, often within very limited areas, and the complicated workings of that wonderful and mysterious force denominated *life*! In view, then, of these simple facts of the case, it would obviously be unreasonable, even under the most favorable conditions, to expect agriculture to advance with the rapid speed that has of late years characterized several of the manufacturing arts. The apparent anomaly, however, only strengthens and illustrates what I am desirous of impressing on this large and intelligent audience,—the necessity and advantage of *connecting practice with science*. The principles of the latter are as applicable to the farm as they are to the manufactory, and the many and peculiar difficulties which at present beset the pursuits of farmers in relation to the higher teachings and applications of science, should induce them more earnestly than ever to devote their lives to inquiry, patient observation and unflinching perseverance, welcoming with gratitude every ray of light which science may throw across their path, in the full assurance that, by degrees, present anomalies and perplexities of practice will be explained, and this noble art removed in great measure, if not entirely, out of the dark recesses of empiricism, into the cheering and health-inspiring light of a progressive science.

Having thus spoken of the connection between science and agriculture, and of the valuable aid the former has of late years rendered the latter, with a prospect of still greater benefits in time to come, I wish to guard myself against being understood as countenancing the erroneous and impracticable idea that an intelligent and improving farmer must, in the *professional* sense of the term, be "a man of science." Such an opinion this audience need not to be told is quite utopian. The progress of the natural and experimental sciences of the present day is so marvelously great that it requires the energies of a life to keep pace with almost any one of them. If youths, intended for farming, as a means of obtaining a livelihood, were placed in the laboratory to acquire and master the very delicate art of manipulation in the higher branches of organic analysis, with a view of becoming accomplished chemists, the time occupied in such studies and pursuits must preclude them from acquiring that practical knowledge and those business habits, apart from which, farming must, commercially at least, prove a disastrous failure. What is really needed, and what is, I think, practicable, is so to instruct our youth in the principles of science, as to enable them to appreciate the results obtained by scientific men, and advantageously cooperate with them in affecting practical improvements. The amount of scientific knowledge which such a view assumes is no contemptible modicum, and would demand years of patient study and careful observation of an active business life to acquire."

JOHN JOHNSTON OF GENEVA.

The *Country Gentleman*, of January 16th, gives a portrait and memoir of this distinguished agriculturist, from which the *Globe* makes the following collations, mainly to show young farmers how much can be gained by bringing brain work to bear upon the hard realities of farm life, and how necessary it is, if the farmer desires to succeed, when once he has put his shoulder to the work, to persevere in well doing to the end.

Born in New-Galloway, Scotland, in the year 1791, Mr. Johnston married in 1818, and came to the United States early in 1821. In October of the latter year, he took possession of the farm where he has since lived, on the border of Seneca Lake, within a few miles of the village of Geneva. It was a stiff and uncompromising clay, some of it swampy, and, though favored in many respects as to situation, (a more charming site could hardly be chosen), offering at the time a much better prospect for hard work than for a comfortable living. The new owner, however, had a genuine Scotch fondness for work, with the national perseverance to back it, and undertook the task in earnest. Twelve years later, in 1833, Mr. Shirreff, a well known Scottish agriculturist, visited this country, and published a narrative of his journey on his return, in which he spoke of Mr. Johnston's "sixty acres in wheat" as "equal to any crop of similar extent" he had ever examined. At a day when little attention was paid to unusual methods of promoting fertility, Mr. Johnston had constantly used lime and plaster (gypsum), which were admirably adapted to the soil, and, in connection with judicious management elsewhere, they brought him large returns. He began with them on a small scale, until the experiment proved that they were suitable for the purpose.

When underdraining began to be earnestly discussed in Great Britain, Mr. Johnston felt at once a deep interest in the subject. He became convinced of its advantages, and that it was precisely what a large portion of our land requires to enable it to bear the vicissitudes of the season and perfect its harvests. In the year 1835 he sent for a tile, from Scotland, as a pattern, and became the pioneer of tile draining in America. This necessitated a heavy expense that could only be met on borrowed capital, and people about thought the Scotchman was a little crazy then. However, in this, as with lime and plaster, his judgement was amply vindicated in the result.

The use of the draining tile, wherever laid, very much ameliorated Mr. Johnston's land, and added to its productive area some fields that were before too wet to be of any real value at all. The winter-killing of the wheat was much reduced or wholly

obviated; the grass, which, perhaps, appeared no more thrifty to the eye, was found thicker on the ground, with a heavier burden to go to the barn; quack, which it seems almost impossible to kill on wet land, was much more easily exterminated; the fertilizers applied, whether manure from the barnyards, or lime and plaster, seemed more efficacious than ever, and in these and other ways, the "crocker" soon repaid the loans, and its effects are still visible for good.

Applying an active and thoughtful mind to the work of the farm, and knowing the importance of manure, he followed the Scotch practice of buying stock in the fall and feeding them through the winter, to sell for the butchers in spring. Exercising a sound judgment in the selection of stock for the purpose of feeding to advantage, he also showed skill in the choice of their food. He used oilcake largely, but his chief dependence was upon Indian corn, finely ground and moistened, along with well cured early cut hay. As he thought it wiser to raise three hundred bushels of wheat on ten acres rather than on thirty, so, in buying cattle, he preferred such as would attach the most pounds of flesh to a single stomach, rather than have two digestive systems at work to produce but little larger net results. He has fed sheep more exclusively than cattle, and with even greater advantage. Of course very large quantities of manure were made, and to this day the old gentleman's eye has a quiet twinkle when you lead him to talk of what dung will do for the land.

One of his great innovations was the applying of manure to the soil in the fall. In this practice he for a long time stood nearly alone, it being so contrary to popular notions, as well as opposed by scientific men. But the results of his practice, especially the spreading of composted manure on winter wheat, proved so signally successful, that the practice extended, and even science had to own that for once she was behind hand. The early cutting of grass for hay, was steadily practised for years by Mr. Johnston, and he was too shrewd a Scotchman to stick to it unless he found it more profitable than the practice too generally followed by farmers, of leaving the grass seeds to ripen before cutting the grass.

He took great interest in advancing the knowledge of agriculture among the masses, and often gave his methods of procedure, as well as the results of his practice and experience, to the world, through the columns of the old *Geneva Farmer*, and afterwards through those of the *Country Gentleman*.

During the past ten years Mr. Johnston has been gradually withdrawing from the direct management of his farm—very gradually, however, as long habit is interwoven its labors and problems we might almost say, into the whole web of his thoughts and existence—and he still retains quite an area under his own superintendence. The sudden death of his wife, some time previously, from a stroke of lightning, while standing just before her own door, was a sad bereavement; but otherwise, the autumn of his life had been for him a peculiarly happy and honorable season. Grandchildren and great-grandchildren have come in turn to nestle in his arms, and long may he be spared to tell them stories of his own youth and of the great-grandfather in whose arms he in turn was fondled, so many years ago, in "bonnie Scotland."

MR. JAMES FLEMING'S FLORAL NURSERY.

We have several times had the pleasure of strolling through the green-houses which form the flower propagating establishment of Mr. James Fleming, Yonge Street, Toronto, and on each occasion have purposed when we had leisure to take notes, and get up an editorial account of the charmed place. The leisure has never thrust itself upon us as yet,—perhaps never will,—meantime it suits our convenience,—possibly our laziness,—and quiets the uneasiness created by an unfulfilled purpose, to avail ourselves of a description of Mr. Fleming's establishment which recently appeared in the *Globe*, from the pen of its Horticultural editor, Mr. D. W. Beedle:—

Mr. Fleming has eight different houses devoted to the cultivation of flowers; all but one are span-roofed, and average about twenty feet by forty, are heated with about 2,000 feet of hot water pipe, and glazed with heavy glass of the first quality.

The first of these houses is devoted at times to Scarlet Geraniums. Of these beautiful bedding plants there were some sixty varieties, including the celebrated Donald Beaton collection, and four varieties of the beautiful new double geraniums, Gloire de Nancy, Princes Alice, Madame Lemoine and Ranuncula Flora.

In the second house were grouped a number of interesting plants, among which were the beautiful variegated-leaved creeping grass *pinicum variegatum*, so much esteemed for hanging-baskets; the Smilax, so much sought for by the ladies as an ornament for the hair or trimming for evening dresses, and the new zonal geranium, "Incomparable," whose flowers are a soft shade of salmon beautifully striped and spotted with white.

In the third house was a miscellaneous collection of plants, which are brought into flower at this season to furnish beautiful bouquets for the winter evening parties.

There were some lovely monthly carnations in bloom, the Libonia Floribunda, covered with its profusion of orange and yellow flowers, and quite a collection of Begonias, with many other plants in flower; giving to this house a very gay and attractive appearance.

The fourth house is devoted to the large flowered fancy and showy Pelargoniums, of which Mr. Fleming has seventy-eight varieties, surely enough to furnish a fine selection to the most fastidious.

The fifth house is devoted chiefly to Camelias and Azaleas, which will soon be in bloom, being now covered with a profusion of buds.

The sixth house is filled with Stivias, Salvias, and other plants for winter blooming.

The seventh house contains but little besides roses, Of the Tea, China and Bourbon Roses, Mr. Fleming has seventy varieties, among which we noticed the grand tea-scented Marechal Niel, with the Canary and Isabella Sprunt. He has also the new climbing rose, "Gem of the Prairies," which combines the climbing habit of the Prairie Rose with the colour and scent of the H. P. Rose.

In Hybrid Perpetual Roses he numbers some fifty varieties, comprising such beauties as Vulcan, Prince Camille de Rohan, Beauty of Waltham, and Madame Charles Crapelet.

The eighth house is set apart for the cultivation of verbenas, of which Mr. Fleming has over fifty sorts, and to which he is continually adding all the new and desirable varieties that are offered.

In addition to these houses we noticed a cold grapeery—a lean-to of eighteen feet in width by eighty-five feet in length—in which the choicest exotic grapes are grown.

There must be an increasing demand for choice plants and flowers in our Province, for already Mr. Fleming has upwards of three thousand plants of the different kinds of Scarlet Geraniums, to which before the time for bedding out arrives, he will add many thousand more of Verbenas and other bedding out plants, which will be sent out to give a charm to our gardens and make our homes attractive and beautiful."

HOWICK AGRICULTURAL SOCIETY.

A meeting of the members of this Society, was held in the Village of Wroxeter, County of Huron, on Saturday, the 12th ult., to hear a lecture on Agriculture from Prof. Burkland, Secretary of the Bureau of Agriculture and Arts, for Ontario. The attendance was not so large as was expected, in consequence of the snow storm; notwithstanding, there were present several individuals from the adjoining townships. Hugh Hamilton, Esq., Vice-President of the Society, occupied the chair.

The Professor commenced by pointing out, in a clear and animated manner, the complex character of Agriculture; showed that, as a pursuit, its successful prosecution very much depended on combining a knowledge of practice with science, and illustrated in a familiar manner the application of chemistry, geology, animal and vegetable physiology, to the proper understanding of the nature and properties of soils—in relation to crops, and the breeding, feeding, and management of farm animals. The keeping of land from deteriorating, by avoiding over-cropping, manuring, rotation of crops, and a more thorough cultivation, was next dwelt upon, illustrating the important position which the raising of live stock must occupy in any improved system of Canadian Agriculture. More stock of the better kinds, and less; but more thorough cultivation of grain, and the husbanding of barn-yard manure, were among the most urgent matters requiring the practical recognition of farmers generally. The waste of dung, from unnecessary exposure and neglect, was incalculably great, while starving crops, by their sickly appearance, were often crying loudly for food. The lecturer urged on the members of Agricultural Societies, not to be satisfied with holding an annual show, but to meet periodically, during the winter months, for the purpose of comparing experiences and discussing questions of the most important local interest in relation to their pursuit. He urged the importance of imparting a knowledge

of the rudimental principles of Agriculture to the young, and said that Mr. Carling, the Commissioner of Agriculture, felt strongly on this subject, and would, it was hoped, before long, give practical effect to his views and wishes. Parties were then invited to ask questions and give information on the various topics that had been treated of.

This brought up several interrogators from Howick, Turnberry, Carrick and Morris; including the names of Messrs. J. Gemmill, T. Ingills, L. Lovell, J. Miller, T. Gibson, &c., who elicited much useful information in relation to the Agriculture of that section of the country, most of which is of comparatively recent settlement. After a hearty vote of thanks to the lecturer, the meeting separated.

JOHN A. BRUCE & CO'S DESCRIPTIVE CATALOGUE.

We have received a copy of the above publication for 1870, being the *nineteenth* annual issue from this long-established and reputable seed-house and nursery. Though not so tastefully got up, as to paper and illustrations, it is hardly inferior to the catalogue of the celebrated Rochester seedsmen, Mr. James Vick, recently noticed by us. According to the custom now established among seed merchants and nurserymen, this publication contains not only lists of seeds, plants and trees, kept for sale, but a multitude of practical directions, that cannot fail to be interesting and useful to all who dabble in gardening, and especially to beginners and novices in the art of horticulture. The Messrs. Bruce not only keep a large stock of common and well-known seeds, but are particular to obtain all novelties of trustworthy character. They not only keep seeds of all kinds, but, having extensive green-houses and a large nursery, can furnish house and bedding-out plants, asparagus, rhubarb and strawberries, ornamental and fruit trees, bulbs, etc. They make the grape a sort of specialty, and keep a large stock of vines, both for out-door culture and for growth under glass. From a careful inspection of their grape houses and grounds, we can testify that better-grown, more healthy plants, than those they offer, are nowhere to be had. Garden-pots, glasses and implements, of all sorts and sizes, may be had at this establishment, and among them Shanks' Lawn Mower, Cahoon's Broadcast Sower, the Wethersfield Seed Drill, and the Dominion Combined Seed Drill and Cultivator. We have pleasure in calling attention to their advertisement, and in commending the Messrs. Bruce to our readers as gentlemen of the strictest integrity, to whom all orders may safely be intrusted for prompt and faithful execution.

TORONTO ELECTORAL DIVISION SOCIETY.

The annual meeting of the above Society was held on Jan. 19, in the Agricultural Hall, corner of Queen and Yonge Streets, Mr. Geo. Leslie, Jr., President of the Society, in the chair, and Mr. Wm. Edwards acting as Secretary. The attendance of members was rather small.

The minutes of the last annual meeting were read and confirmed.

The Secretary read a circular received from the Hon. John Carling, Commissioner of Agriculture, containing directions as to how Secretaries of Societies shall prepare their annual reports. Accompanying the circular were two blank forms, one containing a classification of prizes, the other being a balance sheet of the accounts for the year 1869; also a circular of the Ontario Veterinary College.

The Secretary then read the Annual Report which chiefly consisted of interesting details respecting the Exhibitions held by the Society during the year, and which had been on the whole very successful. The following extract exhibits the financial condition of the Society.

"The Treasurer's financial statement shows total receipts to date \$1,289 79; expenditure \$1,303 05; balance due the Treasurer \$13 26.

A copy of the Treasurer's account from the Union Exhibition shows total receipts, \$1,756 21; expenditure, \$1,515 43; surplus balance, \$240 78. One-half of this balance as per agreement, has been credited to this Society, and is included in your Treasurer's account.

Available assets amount to \$22; liabilities to \$145, showing a balance against your Society of \$123. This has occurred from the liberal appropriation made to the Union Exhibition Prize List, under the expectation that the City Council intended to make a grant to this Society. In this, however, your Directors were disappointed."

The meeting then proceeded to the election of officers, which resulted as follows:—

President,—Major Shaw.

First Vice-President,—George Vair.

Second Vice-President,—James Forsyth.

Secretary,—William Edward, (re-elected).

Board of Directors.—George Leslie, jr., Ald. Strachan, H. Miller, F. Armstrong, J. Cray, James Forsyth, J. Fleming, James Wright and J. A. Simmers.

TORONTO HORTICULTURAL SOCIETY.

The Annual meeting of the Toronto Horticultural Society was held on February 8th, in the Lecture Room of the Mechanics' Institute, the President, the Hon. G. W. Allen, in the chair, Mr. Summers acting as Secretary. In addition about twenty members of the society were present. The minutes of the last annual meeting were read and confirmed. The Secretary then, in response to the call of the President, read the Annual Report, after which the Treasurer read his financial statement from which

it appeared that the Society had prospered during the year, but that there was still an indebtedness of \$800 against the ground, which it was most desirable should be removed as quickly as possible.

The following gentlemen were elected office-bearers for the ensuing year:—

President,—Hon. G. W. Allen; 1st Vice-President—Philip Armstrong; 2nd Vice-President,—F. W. Coate; Corresponding Secretary,—Walter S. Lee; Recording Secretary,—Henry Pellatt; Treasurer,—James E. Ellis.

Directors,—Rev. E. Baldwin, Thos. D. Harris, Geo. Leslie, Sen., J. Gibson, J. C. Gilmour, J. Forsyth, John Gray, Wm. Ince, Geo. Leslie, jun., J. H. Mason, F. Sutherland Stayner, S. A. Summers, Jas. Fleming, John Paterson, Geo. Vair.

Auditors,—Geo. W. Boustead and E. A. Scadding.

AMERICAN DAIRYMEN'S CONVENTION.

The convention met on the 12th of January, and, in the absence of the President, Hon. H. Seymour, the Vice-President, Hon. F. G. Alvord, occupied the chair, and opened the meeting with an appropriate address. The morning session was occupied with the usual preliminary business of appointing committees, &c. In the afternoon, some reports of committees having been received, and among them one upon the subject of the tax on the sale of cheese, it was resolved to petition the Legislature for the repeal of the same.

Professor James Law, of Cornell University, then delivered an address on "The feeding of cattle in relation to their health and produce."

Mr. Willard next spoke on the profits of dairying, also on the advantages to be derived from spaying cows for dairy purposes.

The committee on prize essays next delivered their report, and announced the award for the best essay on cheese as an article of food in favour of Mr. L. B. Arnold, Ithaca. The successful essay was read at a subsequent stage of the convention.

The election of officers was the next business taken up, and resulted in the appointment of the following officers for the current year:—President, Horatio Seymour, of New York. Vice Presidents, Hon. T. G. Alvord, New York; Anson Bartlett, Ohio; X. A. Willard, New York; Sanford Howard, Michigan; Henry Wade, Canada West; K. A. Bliss, Vermont; Moses Hawks, Illinois; Asabel Burnham, New York; ——— Bartholomew, Massachusetts; G. H. Klipart, Ohio; T. S. Harrison, New York; N. W. Woodfine, North Carolina; C. H. Wilder, Wisconsin; John M. Webb, New York; S. M. Wells, Connecticut; H. Calmes, Kentucky; Levi Wells, Pennsylvania. Secretary, G. B. Weeks, Syracuse, New York. Treasurer, Dr. L. L. Wight of Whitesboro, New York. The names of G. B. Moss, of Greene County, and C. B. Chadwick, of Canada, were subsequently added to the lists of Vice Presidents.

Mr. Arnold, of Ithaca, next read a paper on rennet, its nature and use, and was followed by Prof. Caldwell, of Cornell University, who read an Essay on "Fermentation and Putrefaction." A petition to Congress, for the removal of the tax on cheese, was then submitted and approved.

MILLER'S TICK DESTROYER.

WE have pleasure in calling attention to an advertisement of the above preparation, which will be found elsewhere in the present issue of this journal. So many disinterested testimonies have been borne to its efficiency and value that all candid persons are constrained to believe that it is not a mere pretentious nostrum, but a genuine remedy for the evil it proposes to cure,—a most serious one,—as all flock-masters well know. Leading sheep-breeders in Canada, Scotland, and the United States are unanimous in their testimony as to the merits of this compound. Such names as those of George Miller, Simon Beattie and James Paton in this County; Morrison, Graham, Campbell, and McKellar, of Scotland; Hon. H. S. Randall, Messrs. Stephens, Roberts, and Dodge, of the United States, furnish all the guarantee that can be asked, of the utility of this now world-renowned preparation.—We have the utmost confidence in recommending it to all and sundry who may have use for such a curative.

The Farm.

FOUR KINDS OF FARMERS.

There are not less than four kinds of farmers—the scientific farmer, the fancy farmer, the product farmer, and the profit farmer. The first, the scientific farmer, is better known in the ideal than in the real. Such succeed best where the soil is required to feed a dense population, like that of Belgium, where every acre must do its best. The virgin soil of this country, almost illimitable in extent, has not been driven to call in the aid of men of science, or the assistance which scientific investigations could afford. The refusal of the soil in the older States to return maximum crops, together with the deterioration which empirical farming induces, is fast wiping out the prejudices hitherto existing against scientific or "book farming." Many a practical farmer now accepts the fact, that *literature* is a part, an element of agricultural success, and is no longer indifferent to its assistance or its teachings.

The second class, the fancy farmer, or the farmer for fun, is an exotic animal, a little too volatile to keep in this cold climate. This kind of farming does not "count the cost," it is a secondary consideration. The avocation is not regarded from the stand-point of profit, but pleasure. Farming is valued as a pastime, a rural romance. To beautify and adorn, to grow extraordinary products, to excel in fancy stock or fast horses, is the governing passion. Such kind of farming requires capital, and such "farmers" have it. But they have not dug it out of the soil, or moistened their labour by the sweat-drops from a sun-burnt brow. They have luxuriated on the sugar and berries of life, leaving the pork and cabbage to satiate appetites sharpened by the blistered hands.

The farmer for product represents a much larger class, including those who see remuneration in the products harvested, with or without an equivalent

for their investments, or an excess of products, which constitute profit. Farming simply for product has too many superfluities and too little practical information. It is much of chance, devoid of observation, rules and principles. The great mass of this class of farmers are labouring under the disadvantage of a ruinous system of farming, doing the drudgery of farm work without bettering their condition or being rewarded for their severe toil.—Farming for product, narrowed down to its own individual self-doing its work in the old customary way, does but little to promote the progress of agriculture or feed the world, plodding along in the old beaten pathway, disregarding alike all innovations and improvements.

Farming for profit is the desirable view in the panorama of farm life. Profit is the end for which most farmers ostensibly labour, but how few win the prize. The *ovis* exceed the *ins*. The farmer for profit, the farmer for product, and the scientific farmer may be similar, but not identical. Thus, the scientific farmer may labour both for product and profit, and not succeed in securing either. He may err in his appliances, skill, or judgment. He may obtain the product but lose the profit. The farmer for product may so conduct his operations as to win both, or fail of both. The farmer for profit must of necessity be a prudent farmer, but not necessarily a scientific one. He may be innocent of scientific attainments, but possessed of good understanding. He may know nothing of scientific principles *per se*, or of the great and immutable truths of science, yet be well versed in those accomplishments drawn from the book of observation, so all-important in the business of farming.

The business of farming! How fortunate the expression, for who ever succeeds in farming without pursuing it as a business? The whole secret of success is expressed by, and lies in, that single word, *business*, where observation and experience are interwoven therewith, followed by a close study and practical training. Such a farmer forms a system to suit his own peculiar circumstances, and adheres to that system, with such modifications as the exigencies in the case may require. Such a farmer farms for profit, and succeeds.—*Maine Farmer.*

MR. GREELEY ON FARMING.

PREPARING TO FARM.

I write mainly for beginners—for young persons, and some not so young, who are looking to farming as the vocation to which their future years are to be given, by which their living is to be gained. In this chapter, I would counsel young men, who, not having been reared in personal contact with the daily and yearly round of a farmer's cares and duties, purpose henceforth to live by farming.

To these I would earnestly say, "No haste! Our boys are in too great a hurry to be men. They want to be bosses before they have qualified themselves to be efficient journeymen. I have personally known several instances of young men, fresh from school or from city vocation, buying or hiring a farm and undertaking to work it; and I cannot now recall a single instance in which the attempt has succeeded; while speedy failure has been the usual result. The assumption that farming is a rude, simple matter, requiring little intellect and less experience, has buried many a well-meaning youth

under debts which the best efforts of several subsequent years will barely enable him to pay off. In my opinion, half our farmers now living would say, if questioned, that they might better have waited longer before buying or hiring a farm.

When I was ten years old, my father took a job of clearing off the mainly fallen and partially rotten timber—largely white pine and black ash—from fifty acres of level and then swampy land; and he and his two boys gave most of the two ensuing years (1821-2) to the rugged task. When it was finished, I—a boy of twelve years—could have taken just such a tract of half-burned primitive forest as that was when we took hold of it, and cleared it by an expenditure of seventy to eighty per cent. of the labor we actually bestowed upon that. I had learned, in clearing this, how to economise labor in any future undertaking of the kind; and so every one learns by experience who steadily observes and reflects. He must have been a very good farmer at the start, or a very poor one afterward, who cannot grow a thousand bushels of grain much cheaper at thirty years of age, than he could at twenty.

To every young man who has had no farming experience, or very little, yet who intends to make farming his vocation, I say, hire out, for the coming year, to the very best farmer who will give you anything for your labor. Buy a few very choice books, (if you have them not already) which treat of geology, chemistry, Botany, and the application of their truths in practical agriculture; give to these the close and thoughtful attention of your few leisure hours; keep your eyes wide open, and set down in a note book or pocket diary, each night a minute report of whatever has been done on the farm that day, making a note of each storm, shower, frost, hail, &c., and also at the date at which each planted crop requires tillage, or is ripe enough to harvest, and ascertaining, so far as possible, what each crop produced on the farm has cost, and which of them all are produced at a profit, and which at a loss. At the year's end, hire again to the same or another good farmer, and pursue the same course; and so do till you shall be twenty-four or twenty-five years of age, which is young enough to marry, and quite young enough to undertake the management of a farm. By this time, if you have carefully saved and wisely invested your earnings, you will have several hundred dollars; and, if you do not choose to migrate to some region where land is very cheap, you will have found some one willing to sell you a small farm on credit, taking a long mortgage as security. Your money—assuming that you have only what you will have earned—will buy a team and cow, with the few implements needed, and supply you with provisions till you can grow some. If you can begin thus experienced and full-handed, you may, by diligence combined with good fortune, begin to make payments on your mortgage at the close of your second year.

STUMP PULLING.

The *Country Gentleman* gives the following description of a clean stump puller, invented by H. M. Rogers, of Kenosha, Wisconsin:

"I bought two screw jacks, and I had a stout long chain. The jacks have one and one-half feet lift, working in cast-iron pedestals. I procured a

stout beam, eight feet long, and about as heavy as two men would want to carry, and two pieces of plank for the jacks to stand on, together with some blocks, &c., and all was ready. I place the beam across the stoutest root of the stump, one jack on each side, and as near the stump as I think the roots will allow, and resting on a piece of plank. The chain is passed around the root and beam. One man at each jack will raise almost any stump to the full lift of the screw, which in a majority of cases is sufficient; if not, place a stud under each end of the beam; let down the jacks, and placing blocks under them, give the stump another lift. Two men will pull from thirty to fifty stumps a day; and the machine will cost fifteen or twenty dollars, while the jacks are useful for many purposes besides pulling stumps, and would be saleable at any time. There is no patent on this puller.

SPLITTING RAILS.

Rails do not split as well in winter when the weather is very cold as at other times. They always split best in thawing weather, and most so in early spring when the trees are full of rising sap. Many a hard day's work have we spent over the job of rail-splitting. No timber splits so easily as cedar, and without question it makes the best and most durable of rails. Next comes oak, which is often close grained and hard to split. Maple makes good, easy splitting rails, but they are liable to break from the shortness of the grain and do not last long, nor does beech, which is often stringy and tough and full of sap. Pine rails last still less time. Elm makes good rail timber, but is tough and stringy.

In cutting timber for rails it is best to split them as soon as possible after the tree is cut, as the longer it lies the more it dries out and the harder it is to split, while the sooner the rails are split and dried out after the tree is cut the longer they will last. If, after being cut, the rails can be laid away to dry in some out building, where they will not get sodden with rain or snow, they will dry much more quickly and last longer.—*Globe*.

FARM GLEANINGS.

It is estimated that an equivalent of 12 tons of hay can be produced on one acre in roots.

The Quebec Council of Agriculture at its last meeting voted \$2,000 cash to the St. Anne and L'Assomption Agricultural Schools.

THE average cost of producing a bushel of wheat in Iowa is estimated at not less than eighty cents—so says the *Iowa Homestead*.

FARMS soon run down that sell all their hay. Mr. Mechi, the great English farmer, prefers that the products of his farm should go to market on the foot.

LAND is often injured for years by ploughing while wet. Better miss one crop than hurt the land, but better still prepare it in the Fall, when, if well underdrained, there will be but little trouble in the Spring even in wet seasons.

THOSE who think our cultivated lands must grow poor as they grow old, will find food for reflection in the fact that not many years back, the average yield of wheat per acre in England was about 10 bushels—it is now over 30 bushels. Brains accomplished it.

The *Barnstable Patriot* speaks of Mr. James Taylor, of Dennis, eighty-nine years of age, as one of the model farmers of the Cape. Last season he raised handsome crops of corn and potatoes, and made, himself, twelve tons of hay.

Cornell University has not yet been supplied with a permanent resident Professor of Agriculture. It is said that it is now in contemplation to employ a gentleman formerly connected with agricultural schools in Europe. Prof. Law, the Veterinarian of the University, has given good satisfaction.

Modern research has established the fact that in the Winter vegetable life is not suspended, as has been generally supposed. The roots, especially, grow, and there is a general, though slow, circulation of sap throughout the season.

A SOUTHERN paper mentions the case of an eighty acre farm that had become so exhausted as to yield but four or five bushels of wheat per acre, but by the use of clover as a green crop had been made to produce, this year, from 20 to 25 bushels of wheat per acre.

An analysis by Prof. Johnson, of Yale College, of sixteen different kinds of fertilizers, some of which are sold as high as \$85 a ton, shows that a very large proportion of them are worthless. One specimen, selling at \$23 a ton, was shown to be really worth, as a fertilizer, \$2.33.

THE *Ohio Farmer* urges all farmers to begin with the new year to keep accounts of their crops, of the expenses of the family, etc., in true business style. It would serve as a guide to determine what to do to the best advantage, as well as a check upon expenses when the temptation is pushing them beyond the bounds of prudence.

By way of comfort for the losses many farmers have sustained in turnips and other roots being frozen fast in the ground and rotted, they will remember that the soil will be greatly enriched by the addition to it of a large quantity of decayed vegetable matter, and that the next grain crop is likely to receive much benefit from the circumstance.

CLAY AS A TOP DRESSING.—A good quality of brick-clay constitutes one of the best, and also the cheapest top-dressings for certain kinds of land that can be employed. There are thousands of acres of light land, the productiveness of which might be improved to a satisfactory extent by simply carting pure clay on meadows and pasture-fields in the winter season, and spreading it thin over the surface.

THE *Massachusetts Ploughman*, in an article entitled "What Plants Take from the Soil," says (in substance) that instead of buying fertilizers, and thus running the risk of being cheated, it would be best for farmers to make their own. We know of a man who has made his own phosphate for years; and, while costing him much less than the article for sale at the stores, has proved to be double its value. The trouble is to get a pure article of bone, which, in these days of almost universal adulteration, is as likely to have some foreign substance in it as the regular manufactured article.

THE *Rural Southerner* (Atlanta, Ga.) thus emphatically talks upon a subject that has attracted considerable attention. We judge, by the allusion to entrenchments, that the writer must have seen service in the field, if not on the farm:—"Break Deep! DEEP!! DEEP!!! Remember the drought of 1869.

Remember, too, that the sun parches the surface and near the surface more than *further down*, and if the ground is made loose *down there* the roots of the crops will thus be supplied with moisture. A soldier isn't so apt to be killed in a pit as on top of the ground—corn and cotton roots ditto."

THE *Western Rural* pertinently says:—"There are hundreds of tons of hay lost every winter among farmers by careless feeding. We have been astonished sometimes when witnessing the amount wasted around barn-yards and stacks. The waste is entirely unnecessary; and if it was made the rule of every farmer never to feed any kind of stock upon the ground, thousands of dollars might be saved annually. There are times, to be sure, when the earth is frozen dry and clean; but if racks are not provided, full one half of the time the hay will be dealt out either in wet snow or mud, and a good portion lost."

THE *Canada Farmer*, in an article on drainage, says:—"It has been computed that one inch of extra depth in ploughing has added 285 tons of extra soil to one acre, and rendered it capable of retaining under its surface about 1,560,000 additional cubic inches of air. Draining helps the opening up of soil, for air circulates through the drains when they are empty, and from them into the soil. Many experienced drainers consider this a matter of so much importance that they lead all drains to the surface at one end, or give them an air connection by laying in a drain at the top of the field, to which all the other drains are connected, having each of its ends opening to the surface."

THE *Southern Cultivator* (Athens, Ga.) thus presents its ideas of rotation of crops:—"As regards habits of growth, cultivated plants may be divided into two classes: 1st. Those with long tap-roots, as peas, clover, cotton, etc.; 2nd. Those with numerous, fine, fibrous roots, as corn, wheat, barley, rye, and the grasses proper. The former send a large portion of their roots deep into the soil and subsoil, and draw their food largely from these lower depths; the roots of the latter are chiefly confined to the upper layers of soil, from which they take their supplies. One can readily see, therefore, that while several crops of small grain might exhaust the upper soil too much for another crop of the same kind to succeed well after them, the deeper layers of soil and the subsoil may still be rich enough to sustain a good crop of peas, etc. In every rotation, therefore, some fibrous-rooted and some tap-rooted plants should enter."

THE *Western Farmer* (Madison, Wis.) says the wheat crop of that State will average but thirteen and a half bushels to the acre, and then makes up this melancholy estimate of its cost:—

Two bushels of seed at \$1.12½	.....	\$2 25
Ploughing one acre	.....	2 00
Sowing one acre with broadcast seeder and harrowing the same twice	.....	70
Harvesting and stacking one acre	.....	3 00
Threshing 13½ bushels, including labor, teams, and board at 12 cents	.....	1 60
Cleaning and hauling to market, at 7 cents	.....	92
Interest on one acre of land, at \$60, at 7 per cent	.....	4 20
Cost of one acre, 13½ bushels	.....	\$14 72
Cost of one bushel of wheat	.....	1 09
Market price, December 20th	.....	75
Loss per bushel	.....	34
Loss per acre	.....	4 59

COLLECTING MANURE.—The collection and application of manure should go on continually, for the grasses and cereals and all kinds of cultivated plants make an annual draft on the soil for the ingredients which enable them to build up their stems, foliage and seeds. No liquid or solid manure suited for enriching the soil, should be allowed to go to loss about the homestead. Soapsuds, wood ashes, soot, charcoal, sawdust, etc., may be applied to the soil with much benefit to the crops. Leached wood ashes are very useful for top-dressing grass land, deepening the colour of the plants and increasing their productiveness, so much as to double the acreable yield of hay whenever they have been applied in sufficient quantities.—*Rural New Yorker*.

The Live Stock.

PREMIUM DRAUGHT STALLION "ENGLAND'S GLORY."

[SEE FRONTSPICE.]

The engraving which we present on a fly-sheet this month depicts the mammoth, yet symmetrical and handsome, form of the heavy Draught Stallion "England's Glory," winner of the highest honours in his class at the last Provincial Exhibition. This majestic and ponderous animal, was imported from England by his present owner, Mr. J. J. Fisher, of Ben Miller, Ontario. We append a list of his achievements in the prize ring up to the date of the last Provincial Fair:—

1st prize as best draught foal at Boston, 1865.
1st prize at Burton-upon-Humber.....1867
1st prize at Lincoln County Fair.....1867
1st prize at County Fair, Blythe.....1868
1st prize and diploma, Prov. Fair Hamilton 1868
1st prize at County Fair, Brucefield.....1869
1st prize at County Fair, Clinton.....1869

THE APIARY IN MARCH.

Bees were confined to their hives by cold weather earlier than usual last fall. The honey obtained the past wet season is thinner and more waterly than usual; hence bees that are confined to their hives and those that have been housed, should be allowed to fly as early as possible, so that they may discharge their fomes. The longer they are confined without flight, the more uneasy they become. Hives painted dark receive the heat of the sun more than light-colored ones, and sometimes cause the bees to fly when it is too cold for them to return. Such hives should be shaded from the sun during the warmest part of the day. A few boards laid in front of the hives or straw scattered often saves the lives of hundreds of bees amply repaying the trouble. Bees that have been housed should not be brought out only when the weather is warm enough for them to fly well, if they are, thousands of them will be lost.

When the weather is warm, all dead bees and filth should be cleaned from the hives. See that there are no clusters of dead bees wedged between the combs, if there are remove them. See that all have food enough to last till the apple trees blossom. If necessary feed at the top of the hive at sunset, the bees will store it through the night so that it will not induce robbing. I have found the saucers of flower-pots with pieces of comb about an inch in diameter broken into them to prevent the bees from getting drowned, to be simple, cheap and handy for feeding. The bees take the feed more readily from among fragments of comb. Strengthen very weak stocks by exchanging with strong stocks after the first days flight; but first see that the weak stock is not Queenless, if it be, add the bees to any stock that may need them. The bees may be supplied with unbolted rye flour as a substitute for pollen. I discovered last year that they would work better still on wheat flour if mixed with one third oatmeal. Place it in shallow dishes out of the wind, and drop among it small pieces of comb wet with honey or molasses to induce the bees to commence taking it. It is beneficial to promote early breeding and checks the propensity to rob, for idleness is the forerunner of mischief among bees as well as among the human family.

S. H. MITCHELL,
St. Mary's, Ontario.

THE SPARROW.

The German ornithologists are at the present time engaged in an interesting discussion on the merits and demerits of the sparrow. A Hanoverian superintendent, named Overdeich, having charged the sparrow with being a most destructive enemy to agriculture, Professor Giebel, of Halle, one of the most eminent representatives of that branch of natural history, took opposite ground, and triumphantly vindicated the usefulness of the sparrow. Dr. Giebel, of course, does not deny that the sparrow has a fondness for luscious cherries and other good things. "We cannot expect that the bird shall work for us during the day, confining its energies exclusively to the destruction of insects, and reject the tempting cherries or corn, from a pure feeling of duty. The merry day-thief wants a change of diet as much as we do, and we must admit that he is in the right when he will neither be an exclusive vegetarian nor a meat eater, but writes upon his standard 'meat and vegetables.'" A fact recently told by the *Danzig Zeitung*, proves that the sparrow does not confine himself to fruit, even when he can get as much as he wishes. Frederick II., of Prussia, walking one day along the terrace of Sans Souci, noticed that the sparrows were busy at work among the beautiful grapes, which were large, of great excellence, and in large quantities. Enraged at the impudent birds he offered a price for their heads, and within a few weeks not a single sparrow was to be seen in the royal gardens. In the following year, however, not a single grape ripened. After the destruction of the sparrows, the grubs, caterpillars, and snails could carry on their depredations as they pleased, and the King soon saw that although the sparrows were great thieves (which nobody denies) their useful qualities far more than counterbalanced their bad ones. Frederick quickly repeated his edict against the sparrows, and since that time there have been but fat sparrows and beautiful grapes in Sans Souci.

THE BACHELOR AND THE BEES.

A bachelor laird who resides in the *locale* of the Lomond Hills, in Fifeshire, having been presented with a jar of honey from a neighbouring cultivator of the soil and a bee-keeper to boot, became so attracted by the nectarious liquid that he resolved upon becoming an apiarian instantaneously. After considerable higgling he became possessed of a swarm of honey-gatherers and had them borne to his homestead, but owing to the severity of the frost at the time, he, through a feeling of pity towards the insects, had them placed over night in his bed room and in front of a blazing fire. The bee-master turned into bed to dream of flowery meads and ambrosial sweets, but towards midnight a drumming singing sound, as if a congregation of pigmies were at psalm-singing, aroused him from his repose. The entrance of the straw skep containing the colony had not been properly closed, and the swarm, thousands strong, were in activity around him! His loud cries for aid brought prompt assistance, but not without suffering keenly from the darts of the insects was he allowed to leave the room. Considerable difficulty was experienced in getting the bees returned to their former quarters, and the laird, having had enough of bee-keeping, has resolved never again to be so tempted by "sweets."
—*North British Daily Mail.*

A KNOWING DUCK.

About a year ago, Mr. Wm. Brow brought from Woodstock, Ontario, a fine large Muscovite drake. The bird was kept for a few days, and on Christmas morning suddenly disappeared. A few days since Mr. Brow was at Woodstock, and spoke to the man of whom he had purchased the duck, relating its loss. The Canadian informed Mr. B. that the duck was there, and had been there nearly a year, and soon hunted up the bird, proving its identity by a mark on the foot. Upon comparing notes, it was ascertained that the duck arrived there on the evening of the 27th of December, having been not quite two days and two nights in flying back to its former home, a distance of 246 miles. It was brought here by express, in a box, and must have journeyed by instinct. Mr. Brow brought the bird back from Canada.—*Jackson (Mich.) Citizen.*

NOVEL APPLICATION OF COWS' TAILS.—No little consternation was caused on a farm in the neighborhood of Kinglassie, in Fifeshire, lately, owing to a number of the cows belonging to the farmer being shorn of the hair that adorned their tails. The farmer was much perplexed about the affair, for he had strange and strong surmisings that the distiguration performed on his "crummies" was the doing of some one who had no good feeling of friendship; yet on looking round him, he could not point the finger of impeachment to one. The matter grieved him sorely, and not a few council meetings were held by him and his good dame on the matter, yet without any fruitful issue, until his better half picked up a chignon on the maid servant's dressing-table, and which was owned by a servant girl who had entered on the duties of dairy-maid at the Martinmas term last, when lo! it was clearly demonstrated that said chignon had been manufactured out of the husbandman's cows' tails. Its owner now made no secret of the affair, but stated that she had supplied numbers of her fair friends with similar head adorn-

ments against a coming New Year's merry-making.
—*Glasgow Mail.*

COTSWOLD SHEEP.—A. L. Sanborn, of New Hampton, writes the *New England Farmer* that he is better pleased with the Cotswold than with any other breed of sheep he has tried, and adds:—

“Having been engaged in butchering and selling meat, I have found the Cotswold to dress heavier in proportion to the live weight of carcass than any kind of sheep that I have dressed, and they are much fatter on the same keeping. If more of them could be had, it would be money in the butcher's pocket, and gain to the consumer, while the farmer would receive a third more for his sheep. Thousands of sheep now kept by farmers and sent to market, are worth little more than their skins on their backs. While farmers are grumbling bitterly at the low price of mutton, consumers are complaining of its unprofitableness, even at prices so low that dealers are losing money on them, the best they can do. How can this be otherwise? What amount of meat is there on a quarter of mutton, weighing from five to ten pounds? And the common sheep of New Hampshire will average little more. Common sense will teach a man the difference in profit to all concerned between a carcass of mutton that will weigh eighty to a hundred, and one that will weigh thirty to forty-five pounds. The consumer says to the butchers, give us better mutton and we will pay you your price, but we don't want more bones any way; and the butcher says to the farmers, give us mutton; we can't sell mere frames; and unless you furnish a better article, the people will buy beef and pork, and the use of mutton will decrease. I would advise farmers whose flocks are run-down and need improving, to try the Cotswolds this year, and next fall give me the result of the experiment.”

THE LAVENDER FARMS IN ENGLAND.—The lavender farms in England are situated at Mitcham, in Surrey, and at Hitcham, in Herefordshire, and contain about two hundred and seventy acres. Every acre yields about sixty-two hundred pounds of flowers. Every hundred pounds of these give out by distillation about one pound of the otto of lavender, so there is an annual production of nearly seven thousand pounds of lavender otto or volatile oil. It takes six ounces of this otto to make one gallon of lavender water. The perfume sold under this name is an alcoholic solution of the oil with the addition of odorous substances. The compound spirits of lavender is spoken of as “a delightful compound of spices” much employed as an adjunct to other medicines. It is freely used as a carminative, in colic and the like, dropped on a lump of sugar, but its too frequent use is attended with the injurious effects incident to all alcoholic tinctures, both bitter and aromatic.

A MATERNAL ROOSTER.—The *Chariton Democrat* says, Mr. Dane who lives near Garden Grove, has a rooster that has brought up a brood of chickens the past summer. When the little chickens were only two or three days old, the old hen was killed by the hogs, and Mr. Rooster became their protector. He has never deserted them until lately, and he is now “weaning” them. He would put on all the agony of a mother; follow the little chickens, and “cluck”

just as naturally as any hen. He always gathered them under his wings at night, and has laboured most zealously to bring them up in the way that they should go. Mr. Dane would not part with the tender-hearted rooster for any consideration; and should he take a notion to lay eggs next year, he will be able to dispose of them at remunerative prices.

FOWLS RECOMMENDED.—The Bristol (Mass.) Central Committee recommend the Bramas and Dorkings for the table, the Leghorns and Hamburgs for eggs, the Games and Dorkings when all qualities are required of a high degree of excellence; and if pure breeds are not wanted, at least a game cock to improve the stock of every yard.

THREE HUNDRED HEAD.—Mr. J. J. Mechi, Tiptree Hall, has on his farm three hundred head of poultry. He says that fowls are the farmer's best friends, consuming no end of insects, and utilizing and economizing all waste grain. He thinks that it costs no more to produce a pound of poultry than a pound of beef.

LIVE STOCK GLEANINGS.

The very essence of all profitable bee-keeping may be condensed into Oettol's Golden Rule—**KEEP YOUR STOCKS STRONG.**

At Sheffield, England, the Australians preserved meat is to be used in the public soup kitchens for the poor. The agents have contracted to supply it for 4d. per lb.

The foot and mouth disease is now very prevalent in all parts of the Russian Empire. At the Agricultural Exhibition, which was recently held at St. Petersburg, 257 cattle died of this disease.

The *Country Gentleman* speaks in commendation of a curry comb, manufactured from hardwood. Its claimed advantages are, that it will not cut the hair, injure the skin, nor rust nor choke up like metallic combs.

New York was the first State which set up a ‘cheese dairy,’ nearly eighty years ago. Now nearly \$6,000,000 are embarked in the trade. 200,000,000 pounds were made in 1867 alone, and since then the demand and supply have both increased.

Australian advices state, that the Melbourne Meat Preserving Company had enlarged their manufacturing premises, and were preserving mutton at the rate 90,000 lbs. per week. Between 1st of April and 1st October last, upwards of 900,000 lbs. meat of this Company's brand alone were sold for England.

A HARNESS KEPT WELL OILED is easier for the animal, is stronger, and don't wear out half as fast as one allowed to go year in and wear out without care. Clean the harness with a sponge and castile soap. Apply the oil with an old paint brush. A long tin pan saves the drip.

BEES forage for a distance of three, four and even five miles from the hive, and lose but little time in making their excursions, as they are very swift in their flight. Lord Brougham estimates that a bee can fly over 90 miles an hour, or one and a half miles a minute.

The price of Cashmere goat wool in England is 75 and 80 cents, but choice lots are much higher. The pelts of the goat, sell from \$8 to \$10, and a few as high as \$15. There is a limited market for these products in New York city.

It is bad policy to permit stock to get poor at this season of the year. Keep it in good condition if possible. If allowed to run down now, stock will require half the summer on grass to recruit. Horses especially should be kept in good flesh and muscle, as their time for hard work will soon arrive.

A sheep case likely to be tried at the coming Middlesex Assizes, is reported by the *London Advertiser*. Mr. John Crooker, who resides in the locality of Thamesford, undertook to wash fifty of Mr. James Puddicumb's sheep some time since. The sheep at the first dipping were all right, but after the second twenty of them died, and it is alleged by the plaintiff that the defendant had unskillfully, ignorantly and carelessly mixed his composition, by putting into it too large a quantity of arsenic. The defendant states that he measured the arsenic with a coffee canister that would contain three-quarters of a pound or a pound, he did not know which. He also said that he "measured with his eye," and could not or would not tell the proportions of his composition. He further stated that the sheep were turned out before they were dry, and that the composition had dropped from them; and that they had died from eating the poisoned herbage.

The Garden.

HOT-BEDS.

No garden, however small, is complete without a device of some sort for starting plants earlier than they can be made grow in the open ground. Such a device is very servicable, both to the flower and vegetable garden. Every lover of flowers knows how to appreciate the early appearance of those lovely blooms which give cheerfulness to the spring and beauty to the summer. Any plan which will expedite the blossoming of flowers, adds greatly to the charm and value of the garden. Those who are unfortunately devoid of the tastes which enable people to relish floral beauty, are nevertheless able to understand the charm there is about a good supply of early vegetables. There are few indeed who do not relish the radishes and lettuce which help so much to make a plain breakfast palatable in the spring of the year, or the early beets, potatoes and cucumbers, whose presence on our dinner tables is proof positive that the winter is over and past. No doubt a very useful garden may be had without resorting to any expedients for obtaining extra early products, but the time, cost and trouble, required by such expedients, will be far more than repaid by the returns; in this climate especially, it is so late in the season before all danger of frost and inclement weather is past, that much valuable time is lost if the sowing of seed is deferred until it can be committed to out-door chances.

The hot-bed is the simplest and most common contrivance for obtaining the above mentioned results; It may be a very cheap, rude, primitive affair, or

nically constructed, and somewhat expensive. Let no one be detained from making a hot-bed on account of the cost, since that may be reduced to a mere trifle; four pieces of rough unplained board nailed together at the corners, and covered with an old sash, (glazed of course,) will answer the purpose, but it is of course preferable to have something better, when practicable, as it is in most cases. A well-made frame which can be taken apart, and stowed away when not in use, and fitted up with sash so made, without intervening bars, that the rain will have free drip from pane to pane of glass, is what we editorially recommend to our readers. The hot-bed may have from one to four lights of sash according to the size desired. Having provided frame and sash lights, the next requisite will be the heating material; this is either stable manure, leaves, or tanbark in a state of fermentation. The generality of persons will find stable manure the most convenient material; a supply of this being at hand, the first thing to be done is, to throw it into a heap to "sweat," in other words to work off the first intense heat, which is often unmanageable. For doing this, it should be shaken up very loosely, all mottled portions being thoroughly separated. If the manure be dry, water must be applied from time to time so as to moisten the heap as evenly as possible; in a few days the material thus thrown together will become exceedingly hot; it must then be turned completely inside out, and carefully forked over; in three or four days it will be in a fit condition for building the bed. A site should be selected on a perfectly dry piece of ground, and in such a position that it will be exposed to the sun during the whole day. If sheltered from cold winds so much the better. The bed may either be built on the surface of the ground, or in an excavation a foot or eighteen inches in depth; some prefer the excavation as better protecting the sides of the bed, and so securing a more uniform heat, a matter of considerable importance in order to the greatest success. The ground plan of the bed should be as nearly level as possible, and the manure evenly built up the requisite size and height, which last may be about three feet. As to size the bed should project about a foot beyond the frame in every direction. The surface of the bed having been made as level as possible, it should be covered with good mellow soil to the depth of about five inches. Next set on the frame, place the sash lights, and shut all up close until fermentation takes place and the soil becomes quite warm; a trial of the interior heat may be made by thrusting a pointed stick into the hot-bed; if on its withdrawal, it is found comfortably warm, the seed may be sown. It is not necessary to give a list of the flowers and vegetables which it is desirable to sow in a hot-bed, as the tastes and wants of the cultivator will decide the selection. Care must be taken to sow the seeds a proper depth.

Directions on this point will be found in the catalogues issued by seedsmen, which are now so common. Some of those catalogues form a complete hand-book of hot-bed and garden operations. This remark especially applies to that issued by Mr. James Vick of Rochester, N. Y.

When growth has fairly commenced, great care will be required to avoid scorching the young plants. On bright days the heat will be intense inside the frame. Air must be freely given, or some method to obstructing the sun's rays resorted to; the use of curtains, straw mats, or light board shutters, and whitewashing the glass, are the chief methods employed for this purpose. After vegetation has fairly commenced in a hot-bed, every thing depends on the proper regulation of the temperature. The greatest vigilance is necessary, since an hour's neglect when the sun is shining brightly, may ruin all. As the time approaches for transplanting the young plants into the open ground, they must be gradually "hardened off," as it is termed, by exposing them more and more to the air, so as they will feel the removal as little as possible. It is a good plan to sow melons in the central part of the hot bed, and leave them in undisturbed possession of it when all other plants are removed.

THE ORCHARD.

To the Editor of the Ontario Farmer :

Sir,—In my last communication I gave some of my views of orchard planting, and also my plan of cultivating the same. I now proceed to give a list of the varieties of fruit that have succeeded best with me, in this section of the Province.

APPLES.

Red Astricon.—This apple is, I believe, the most valuable early apple we have. The tree is a vigorous, rapid grower, bears young, and is very productive and hardy.

Early Harvest.—A good fruit, but requires high culture, and should be often washed to keep it free from the bark louse. If neglected it soon becomes almost worthless.

Golden Sweet.—One of the best of sweet apples. Tree thrifty, hardy and very productive.

Fameuse, or *Snow Apple*, *Falman Sweet*, *Gavensien*, *Rhode Island Greening*, *Baldwin*, *Golden Russet*, *Rock Russet*, and *Twenty-ounce Pippin*, have all succeeded admirably with me.

PLUMS.

The *Washington*, *Imperial Gage*, *Lombard*, *Duales*, *Purple*, *Orange Egg*, *Yellow Gage* and *Freine Claude*, have been the most profitable varieties I have tried for market purposes. The greatest drawback to the cultivation of the plum is, no doubt, the curculio. It has not troubled our fruit in this

neighborhood, till the last two seasons. The past season fully two-thirds of the fruit has been destroyed by this pest. Jarring the trees and catching them seems to be but a partial remedy. The rascal cannot be shaken from the tree until he has made his appearance and taken possession, and then no time is lost before the mischief is begun. Besides jarring the trees, I have every immature plum that falls from the trees gathered and burned, to destroy the larvæ. It is worthy of notice that the *Orange Egg* plum has, with me, been almost entirely free from the ravages of the curculio. I do not think that this has been by chance, as I have trees of this variety scattered throughout my whole plum orchard.

THE PEAR.

This is a fruit that deserves more extended cultivation in Ontario, but those who are going to plant should be careful to select those varieties that are known to succeed in the locality where the planting is going to be done, as those varieties that succeed well in some soils and localities, often fail in others. Dwarf pear trees have not succeeded well with me, nor am I prepared to recommend their cultivation, except for fancy, in small gardens and where land is scarce. If profit is the object, I would say emphatically, plant none but Standards.

The following list has been satisfactory with me, and the three first have succeeded as dwarfs :—

Louise Boune de Jersey, *Amanlio*, *Rostiezer*, *Bartlett*, *Sheldon*, *Burre Deil*, *Madeline*, *Easter Burre*, *Belle Lucrative*, *Duchesse de Angouleme* and *Howel*.

I would state that the *White Doyenne* and *Buffum*, two popular varieties, have proved entirely worthless with me. The fruit becomes spotted, cracks open, and gets hard and useless.

S. H. MITCHELL.

St. Mary's, Feb., 1870.

GRAPE CULTURE.

To the Editor of the Ontario Farmer :

Sir,—Being desirous of seeing the native American grape more extensively cultivated, for the table and for wine, in this part of Canada, where the climate and soil are so well suited, I submit a receipt for insertion in your valuable journal, which I have found to be the cheapest and most effectual mode of out-door propagation, by which I have made good plants of several varieties of the native vine.

Make cuttings in the Fall, in November or December, of one year old wood, well ripened; leave two buds on each cutting, one to form the root and the other the head of the plant. With a sharp knife make a clean cut straight across below and near the lowest bud, being careful not to rub up the bark at the cut. The wood above the upper bud may be cut slanting. Back all the cuttings thus prepared in sand, in a cool cellar, and let them remain until the first day of June, when you will find the buds swelled and the root ends callused; dig a trench in well cultivated soil, the

width of a shovel and ten inches deep, running east and west, which, fill with sand, and in this set the cuttings a couple of inches apart, consolidate with your feet and mulch slightly with sawdust, tan bark, rubbish straw or leaves; have prepared two boards, each twelve inches wide, nailed together at right angles and place over the cuttings. In ten days you will find every vine has made a start; then raise the covering on the north side about four inches to admit light and air, and gradually raise higher as the plants grow, and towards the end of summer remove altogether. The same boards will suit for winter protection. By this plan, which I claim as my own, I have made superior Delaware and other plants, not losing five per cent., and I am satisfied that any other person who is sufficiently careful can do the same.

Yours sincerely,

WM. HASKINS.

HAMILTON, 17th Feb., 1870.

THE NORTHERN SPY APPLE.

Mr. O. T. Springer, of Wellington Square, Ont., gives the following account of his experience with the above named apple, in a communication to the Horticultural Editor of the *Globe*:—

"I have an orchard of 120 apple trees, 70 of the Northern Spy variety about 20 years old, which have been bearing *annually* for 9 or 10 years, and during the past four years have averaged 140 barrels of selected fruit per annum.

My method of cultivation is to top-dress the soil with short manure, either during the latter part of autumn or in winter, as may be most convenient.

As soon as the frost is out, go over the surface with a common harrow, for the purpose of pulverizing, and securing a more even distribution of the manure; followed with a shares harrow which is so constructed that it will not cut out or injure the roots. Going once over and afterwards crossing your work at right angles leaves the soil thoroughly comminuted to a depth of five or six inches.

Subsequent treatment consists in a repetition of the harrowing when weeds promise to become troublesome or the soil becomes compact.

On the subject of pruning I may remark, that the Northern Spy tree requires careful management.—The usual cut and slash system will not do; if adopted and adhered to, a rampant growth of long, straggling limbs, may result, but fruit will be scarce, and in all probability inferior in quality. Thin the top by cutting out all middle branches, that the tree may acquire a spreading habit, and the sun's rays have a chance to penetrate freely.

Carefully husband all fruit spurs, whether found on the sides of large limbs or smaller ones; many of the best specimens of fruit grow on spurs of six inches or more in length, that may be found projecting from limbs four or five inches in diameter. Doubtless many of your readers will say all this involves considerable trouble. By way of encouragement to others to do likewise, I will state that the net profit on fruit sold from my 70 trees of Northern Spy last autumn amounted to the sum of \$560, an average of \$8 per tree.

Results similar to the above have so far establish-

ed this apple, in my opinion, as profitable to the fruit-grower, that in an orchard of 40 acres, I have planted 800 trees of this variety."

A NEW WAY OF GROWING FRUIT TREES.

A mode of making productive fruit trees in a single year from fruit-bearing limbs has been patented by Mr. Sullivan Hutchinson. By means of this process, limbs which can be spared from trees of choice varieties of fruit, can be transformed into independent trees, which bear right along, and in a very short time become fine, thrifty trees, retaining the habits of the trees from which they were taken.

The *modus operandi* is said to be as follows: Small roots are grafted into the limb or branch above the point where it is to be severed from the tree. Below these roots the branch is girdled. About and below the roots is placed a box filled with earth. The operation is performed in the Spring. During the Summer the roots grow and perform their functions, and in Autumn the limb or branch is severed in the place where it was girdled, and set out like a young tree. The next year (Mr. Hutchinson says) the new tree will bear fruit just as though it had not been cut from the parent.

Except grafting the roots in the limb or branch, there appears to be nothing new in the process; for shrubs and trees have been propagated from time immemorial by girdling or tying a strong ligature around a branch, surrounding it at the point where the roots are expected to grow with soil inclosed in a box or frame and kept damp by daily watering.

SOWING VERBENA SEED.

A recent number of the *English Journal of Horticulture* contains the following:—

"To have good strong plants for blooming early next year, you may sow the seed now. Well drain a seed pan, and fill it to three-fourths its depth with two-thirds corfy light loam and one-third leaf mould, then to the rim, or nearly so, with the same soil sifted, adding one-sixth part of silver sand. Level the surface by pressing it with the bottom of a small flower pot, and scatter the seeds evenly, just covering them with the soil. Give a gentle watering, place the pan in a cold frame or under a hand-glass, and shade from bright sun. Keep moist and close until the young plants appear, then admit a little air, increasing the amount with the advance in growth of the plants. When these are large enough to handle, they may be picked off in pans at about one and a-half to two inches apart, and kept rather close and shaded for a few days until established. Harden them well off, protecting them only from frost and heavy rains, and giving them all the air possible; before severe weather sets in remove them to a shelf, or light airy position in the green-house.

In February or March the plants may be shortened to two or three inches, and cuttings made of the parts removed, which will strike freely in a mild hot-bed. When the plants have made fresh shoots an inch long, they ought to be potted off singly, or placed four inches apart in pans, and shaded until established; then harden them off and remove them to a cold frame, protecting them

from frost by a covering of mats. You may obtain one or more lots of cuttings from them, and these, with the old plants, will be fit for planting out in May. Seedling Verbenas are of little use for bedding except in mixed beds. The seed may be sown in March, and the plants from that sowing will be large enough for planting out at the end of May.—*Rural New Yorker.*

GRAFTING DURING WINTER.

An article contained in the number for August, 1869, of the Journal of the Societe Imperiale de Centrale d' Horticulture (Paris), entitled "Note upon Winter Grafting," has reminded us of a proceeding already indicated, and practised by Landais in the sixteenth century, but which still remains without application, along with many other excellent inventions and happy improvements. Now, to advise grafting in December and January, when the sap is inert, and in an absolute state of repose, appears at first sight to be a paradox, in fact perfect nonsense. However, the practice given here is a complete contradiction to the theory, as is proved by several perfectly successful experiments, many of which, thoroughly conclusive in their character, are mentioned in the article in question, by M. Laure, of Toulon, a member of the society. It is the kind known as cleft grafting, which has been the subject of experiment; and we here give some of the numerous examples mentioned in support of the practice.

In December, 1836, M. Flory grafted five wild stocks in clefts, and, after the operation, they certainly presented anything but a promising appearance. In the January following, there happened to be some very severe frost; however, in March, the buds of these five grafts commenced to swell, and became developed; while those of other grafts which had been operated upon in the usual season had scarcely shown any signs of vitality. They were completely successful, not one failure occurring out of five operated upon. The following year, the same gardener performed a similar operation, at the same season, upon nearly a hundred subjects; and this experiment was attended with complete success.

It appeared to us that it would be very useful to reproduce a short summary of this excellent note, in order that by so doing we might call the attention of the numerous cultivators of fruit trees to this interesting subject. Should the practice be found worthy of general adoption, it will render them immense service, by enabling them to perform their operations during the dead season, when time hangs heavily on their hands, and leaving them at liberty to employ in some other manner the time usually devoted to grafting in the ordinary season.—*Verschaffel's Illustration Horticole.*

HOUSE PLANTS.

The reason why it is so difficult to keep plants during the winter in our sitting rooms is that our rooms are too dry and hot for their healthy growth, and oftentimes too dark. Plants thrive best in a moist atmosphere, the heat varying with the natural requirements of the plant, and where they have plenty of light. It is not easy to overcome the difficulty, but the suggestions of the Buffalo

Express on this point are valuable. It is suggested by the *Express* that the flower-pots be set in a box in which they can be plunged to the rim in moss, and the whole surface, except the earth in the pots, be nicely covered with green moss. This moss can be kept moist by sprinkling it with tepid water, and the evaporation arising from the moss will give a moisture to the air surrounding the plants. It will be found that the plants treated in this way will not require to be watered as often as those standing with the pot exposed in the usual way. As often as once a week the leaves should be freed from dust by a good sprinkling from a fine-rosed watering-pot, or, what is better, a fine syringe.—*Globe.*

LILY BULBS.

It may be that some of our readers have not obtained and planted bulbs of the choice lilies during the past fall, and yet they feel a desire to have them in flower the coming summer. To such we say, obtain the bulbs as soon as you can, and pot them in a soil composed of two-thirds sharp sand. Place them in a warm, dry cellar until March, and then bring them up into a cold frame or the window of a common living room; water just enough to keep them moist, not at any time wet or dry, and as soon as they begin to grow, give them a position in a spent hot-bed frame, plunging the pot. When the weather gets warm out of doors the bulbs may be turned carefully out of the pots into the open ground, being careful not to loosen the soil among the roots. The blooms will be much better than will those which are not planted until the frost leaves the ground in the spring.—*Rural New Yorker.*

THE EUMELAN GRAPE.

The Directors of the Ontario Fruit Growers' Association have decided to give to every member, and to those who may become members before the time for distribution arrives, a vine of this grape, if they will promise to take care of it, and report thereon annually to the Secretary for five years.

Mr. W. H. Wilcox, of Reading, Mass., writes to the *Horticulturist* that he has found it a very vigorous grower, and remarkably short jointed; the bunches of good size, the berries about the size of the Hartford Prolific, and of superior flavour. The fruit ripened with him before the Hartford, standing in the open ground and facing south; the Hartford standing about two feet from a building and facing west. He thinks it to be the best black that has yet been brought to the notice of the public.

THE SWEETEST GRAPE.

A committee were appointed to test the saccharine properties of several varieties of grapes at the meeting of the Vine Valley Grape Growers' Association, held on the 20th October, 1869. They report that in every instance the sweetest grapes were from the vineyards having the highest altitude.—They used Echele's must scale. On several samples of Isabella the highest stood at 85; the best Catawbas at 90; the best Concord at 85; Diana at 90; Iona at 97, and Delaware at 107. According to this experiment it will be seen that the Delaware

contained the most saccharine, standing 10 degrees higher on the scale than any of the other varieties.

WASH FOR FRUIT TREES.

The *Germantown Telegraph* says:—"It is probably a little late to wash trees with a view to the destruction of insects, yet it is never too late to do good, and washing the trunks of trees with a proper mixture will not only kill insects, but will add greatly to the health of the tree. For a wash we have already recommended whale-oil soap, which we have found to be an excellent application, seeming to combine all the ingredients distasteful to insect life. Recently petroleum and common soft soap, in the proportion of a pint of the former to a gallon and a half of the latter, is considerably used. We have no doubt this will answer, and it is in some respects similar to the other. We also see recommended the old application made of sulphur, tobacco and lime, mixed with water, but we like the others better; as scraping and scrubbing of the trunks of trees, say twice a year, will exercise a wonderful influence on their health and productiveness."

THE GARDEN MANAGER.

There are hints for many a farm reader in the following remarks of "Rural" in the *Chicago Tribune*, though we cannot believe that the family he describes were of thrifty New England training:

I once visited a farm of a thousand acres, and the owner took great pride in showing his fine stock of cattle and horses, but in sitting down to breakfast it consisted of plain bacon, a dish of hominy, bread, common New Orleans molasses, and strong coffee. The wife said their only vegetables had been a few hills of cucumbers. Both appeared to think that a garden could only be managed by a professional gardener. They had never given the subject attention, and were surprised to hear that at a small cost they could have all the vegetables found on hotel tables.

On visiting the garden, or the place so-called, it was found filled with weeds, in which were a few sickly beets and cabbages wholly unfit for use. Directions were given to pass the mower and horse-rake over the ground to clear it of the crop of weeds; to give a liberal dressing of manure, and to trench-plow it eight to ten inches deep. It was left in that condition until spring, and then given a top-dressing of old well-rotted manure; then harrowed and planted and rolled. Rows of grapes, currants, raspberries, asparagus, and rhubarb were planted, and adjoining these a small orchard of apples, pears, and the cherry. Three years later the aspect of the place was changed, and the first thing to be shown was the garden and the orchard. In the meantime the lawn had been recovered from dock, plantain and pig-weed, sown to blue grass, and planted to trees. These had been well mulched, and were making a fine growth. With the improved condition of the garden, orchard and house grounds came poultry and a small dairy—the never failing complement of a good garden, and now the morning meal was fit for a family of lords of the soil. This family have given up the idea of going to town to live after staying on the farm to make a fortune in

feeding stock, for they are now living on the farm. The wife has charge of these improvements, and her assistants were some few works on the several subjects. Among these "Bird's Kitchen Garden," "Fuller's Small Fruits," and "How Crops Grow," were the most read, but many knotty questions were answered by private correspondence. Sanders, Edwards, Hull, Winkler, the Tremont Gardens, and others, were laid under contribution. None but the common farm hands were employed to do the work, but this was always under the direction of the wife. It is a notorious fact that the farmer's garden, under his care, has been a failure, and, therefore, it would be safe to put it in charge of the wife. This will give her out-door exercise so much needed, and at the same time she has a deeper interest in her country home. She will be prouder of her home, of her table, and of her husband, for her genius and good taste have done their part with him in making their home a home indeed.

GLADIOLUS FOR SMALL GARDENS.

"D. of Deal," names the following six varieties as his choice for a small selection, viz:

Shakespeare, which is a beautiful white flower, fine form, with large rose spots, possessing a good constitution and forming a "model of a spike."

Adolphe Brougniart, which is not known to us.

Meyerbeer, with a spike not easily excelled, very showy, brilliant vermilion orange, flamed scarlet, and spotted with amaranth.

Thomas Methuen, which we have not seen.

Ulyse, fine rose color, unsurpassed in form.

Madame Fontado, a rosy white, flamed with deep carmine rose, a large flower.

THE TWO BEST CHERRIES TO PLANT.—At the recent meeting of the American Pomological Society, at Philadelphia, President Wilder suggested that each delegate should name one variety of cherry that was considered to be the best and most flourishing in the section where he resided. The names are as follows:—

The President named "Downer's Late" for Massachusetts.

Mr. Saul named "Coe's Transparent" for Washington.

Mr. Quinn named "Coe's Transparent" for New Jersey.

Mr. Frierson named "Coe's Transparent" for Tennessee.

Mr. Arnold named "Old Kentish" for Canada.

Mr. Nicholson named "Early Richmond" for Indiana.

_____ named "Coe's Transparent" for Kentucky.

_____ named "Belle de Choisy" for Tennessee.

_____ named "Early Richmond" for Illinois.

It will thus be seen, that for the Eastern and Middle States "Coe's Transparent" takes a very high position—and, we think, deservedly so; while at the West, where the heart-cherries are generally unsuccessful, the "Early Richmond" stands in the front rank. This selection is in accordance with the views held for many years past by some of our best pomologists, and young planters will know

how to make an excellent list of one variety for their particular localities.

TOADS IN GARDENS.

The *Journal des Connaissances Médicales* states that of late years French horticulturists have followed the example of the English ones, and peopled their garden with toads. These reptiles are determined enemies of all kinds of snails and slugs, which it is well known can, in a single night, destroy vast quantities of lettuce, carrots, asparagus, etc. In Paris toads are sold at the rate of two francs fifty centimes a dozen. The dealers in this uninviting article keep it in large tubs, into which they plunge their bare arms, without any fear of the poisonous bite to which they are supposed to expose themselves. Toads are also kept in vineyards, where they devour during the night millions of insects, which escape the pursuit of nocturnal birds and might otherwise commit incalculable damage on the buds and young shoots of the vine.

GARDEN GLEANINGS.

Mr. A. C. CLARK, Seneca, N. Y., writes to the *Rural New Yorker*, that he thinks the Martha is the best white grape we have for general culture.

A CORRESPONDENT asks the *Small Fruit Recorder* which variety of strawberry is the most profitable, and the reply is, "Wilson's Albany, the world over."

A correspondent of the *Country Gentleman* thinks if fruit trees were planted instead of maples, we should have both shade, ornament and fruit.

The raising of mushrooms is found to be quite lucrative by the fancy gardeners of Boston. They sell readily at a dollar a dozen.

A lady in Ypsilanti, Mich., found, this summer, among her old potatoes, one which had split open, and inside were found three new potatoes as large as hickory nuts.

The Chatelaine is a new French strawberry, highly recommended by foreign fruit-growers. Its form is somewhat peculiar, being that of an elongated cone.

A correspondent of the *Country Gentleman*, says that from one year's experience with Conover's Colossal Asparagus he feels, willing to say that he considers it a new variety and perhaps a very valuable one. He thinks his one year old plants of this variety are double the size of plants of the same age of the common variety.

A CORRESPONDENT of the *Rural New Yorker* thinks he kills the Peach Tree Borer (*Egeria ciliata*) by the use of hen manure. He places a quantity in some vessel, pours hot water on it, stirs it and pours the liquid around the stem, near to the roots. He does not tell us how much he used, but he does tell us, that he first removed the worms from the roots of his peach trees.

At a meeting of the Deerfield (N. H.) Farmers' Club, Mr. David Garrish said that the bearing year of a fruit tree may be changed by picking off the blossoms one year, so that it will bear the next. The bearing year of a tree depended much on the year it was grafted. He had a Porter apple tree which bore fruit on one half of the tree one year, and on the other half the next year.

A PHILADELPHIA reporter lately counted, in the vegetable market of that city, eighty-two large country waggons, containing in all about fifty thousand heads of cabbage. It was all sold quickly at a good price. It is said the supply of cabbages is never too great for the demand in Philadelphia. Of peaches and grapes, the city sometimes gets an oversupply; and of the raw material for manufacturing sauerkraut, never.

The Editor of the *Gardener's Monthly* says that nothing is easier than to grow gooseberries. It is a mountain fruit, and does not like a hot soil. Set the plants across the lot in a pretty thick row, and pile up over the roots five or six inches deep of old brushwood, corn roots, old leather boots, pots or kettles even, if you cannot get anything else, so that the roots will always be near the surface and get cool, and good crops will always be the result.

The following method of grafting, or rather budding, is said to be practised successfully in France. It can be performed at any season. Remove a small piece of bark and wood, leaving a smooth and flat surface, to this a similar piece containing the bud is fitted and the joints are sealed with colodion. This forms a strong, impervious cuticle, which secures a free circulation of the sap on the approach of warm weather, and a perfect union of the parts.

The *Working Farmer* (New York), in talking about family gardening, remarks: "It is surprising to notice how much of pleasure and profit a mechanic or a merchant, by an hour or two of pleasant labor, before or after his day's work, will derive from an insignificant patch, hardly worthy to be called a garden. And yet many farmers seem to think a garden not worth their attention. This is a mistake; for it can certainly be shown that no part of a farm repays labor better, or as well, as a rightly-conducted garden."

The *Gardener's Chronicle* says that Conservatories into which plants are introduced from the forcing pit, should be kept as close as possible. Cold air, if admitted into houses in which highly forced flowers are, will not fail to injure them irretrievably. A little air should be given at the top of the structure, and this, with the aid of a little artificial heat, will allow the heavy atmospheric moisture to pass out, and so afford a greater amount of buoyancy to the internal atmosphere.

The *Gardener's Chronicle* gives great prominence to a new dahlia, named Dahlia Imperialis, which it describes as magnificent, growing upward of twelve feet in height, each of its branches being terminated by clusters of beautiful white flowers. As a late flowering conservatory plant it is a great acquisition but its great height is objectionable. Mr. Alfred Safter, an English florist, has succeeded in dwarfing it by grafting on tubers or dwarf varieties.

Roof felting wound around the body of trees, tied with a string at the top and bottom, is a sure protection against mice. If too much heat is feared from the color, it can be changed with a whitewash brush on a thousand trees in one day. Cut the felting in strips long enough to protect the trees where the snow drifts, and wide enough to go around the body; leave no space between it and the ground, and you have a jacket that no mouse or insect will go through.

A gentleman, wishing to ascertain to what extent aquatic birds might convey seeds from one lake or pond of fresh water to another in the mud adhering to their feet, placed a teacupful of such mud in a situation to allow the seeds which it contained to germinate, and as fast as the little plants appeared he pulled them out and counted them. He obtained from the single teacupful of soil more than two hundred living plants!

Our Country.

THE ONTARIO FARMER AND EMIGRATION, &c.

To the Editor of the Ontario Farmer :

Sm,—During the past year, I had a few highly esteemed friends in England, who were almost persuaded to emigrate to Canada, and at the same time were very anxious to obtain an authentic account respecting the temperature of the climate, productiveness of the soil, price of grain, wages, &c. I have, therefore, devoted much time to replying to their enquiries, and describing the advantages and disadvantages of this country, and the class of men who seldom fail to make their mark in our New Dominion. But I have always felt inadequate to the task, and, in order to make up for my deficiency, I have forwarded to them the twelve numbers of the ONTARIO FARMER, believing it to be one of the most instructive periodicals, for the intending emigrant, that hath been issued from the press. The great good that may result from thus spreading reliable information, on the above subjects, in my native land, is not for me to determine; but I am thankful to state that one family of my relatives (during the last summer) have arrived safe in this country, where they can eat bread without scarceness, and one of the number was my affectionate mother, at the ripe age of seventy-five years. I have now, not only the unspeakable pleasure of beholding her care-worn face again, and holding converse with her, but I have this consoling thought to cheer me, that she will be well provided for during the declining years of her life. Having disposed of the ONTARIO FARMER, for 1869, as above stated, you will please to send me a bound volume, for I consider the instructive matter contained in the above to be worth more than double the subscription price, and, as a few of my own practical thoughts are embodied therein, the book will be prized by my posterity, when the hand that now holds this pen shall be inactive in the grave.

I had half resolved in my mind not to subscribe for so many agricultural papers this year, for I have scarcely time to read them all, during the summer months; but, first of all, the *Canada Farmer* came to hand, quite unexpectedly; when I had read it, I thought, "What, twelve such numbers as this for

one dollar!" Here, too, they have voluntarily sent me the first number without my sending them the cash." Here goes another dollar for 1870."

Just then the ONTARIO FARMER, for January, came to pay us a friendly visit, stuffed full of valuable information. I read part of it the same evening that I received it, and was so taken up with the new arrangements and visible improvements, that I was not aware how swiftly the time passed away until I looked up at the clock and found I had been reading nearly five hours; by that time I was fully persuaded that I must continue to be a subscriber. The next morning my wife said, "I thought you did not intend to take all the papers again this year." We will see about it soon, said I. Here is something I have not read yet, if you will be so kind as to listen, I think you will be quite delighted. The hum of the spinning wheel was hushed, while I read aloud the article, headed "Farming for Boys." As soon as I had read the first chapter, my better half exclaimed, "If that is a fair sample of what the ONTARIO FARMER is to be, I will subscribe for it myself, and, after reading it, will send it up west to our boy. I then read part second, which fully confirmed the good resolution, and, quite in accordance with my own. I hope there are many more such mothers in the Province of Ontario, and if they have sons engaged in hewing out for themselves a home, I hope they will send them the ONTARIO FARMER; they will thus be prompted to mend a seven years leak in the boy's trough.

I am also a subscriber for the *Rural New Yorker*, for I must have something fresh every week to feed the minds of myself and family, and, as the two papers are clubbed together, you will find the remittance enclosea.

The Early Rose potatoes that you sent me came safe to hand; I was very highly pleased respecting both the quantity and quality. Last August I received ten of the earliest and best kinds of potatoes in England, forwarded to me by my very highly esteemed friend, Wm. Mayne, Esq., of Feignmouth, Devon, Eng. One of the above kinds, viz the Improved Lapstone Kidney, was awarded the first prize, in that place, on the 15th day of July last, a few days before they were sent to me, and I believe I might have raised a second crop from them, for they had commenced to sprout before they reached me, and I had to expose them in the open air until they were quite green in order to retard their growth. They are now placed in shallow boxes, half filled with dry sand and saw-dust, with their crown eyes upward, and kept as cool as possible. They will be planted by the side of the Early Rose, so as to give them a fair and impartial trial, and, should there be anything worthy of note, I will forward the information to you in its season.

THOS. HOOPER.

COLUMBUS, Feb. 7, 1870.

HINTS TO INTENDING EMIGRANTS.

Under this head the editor of the Parry Sound *Advocate*, himself a settler in the Muskoka District, gives the following information for the guidance of those emigrants who intend to make a home in Ontario:—

THE BEST TIME TO ARRIVE.

If possible, get to the Free Grant Districts by the first of May. In order to get a little crop in, it is desirable that emigrants arrive here as early as possible. One week will be required to select your location, another to erect a log house, then follows the clearing of some land and cropping the same.

It is not to be expected that much can be done the first season, but by a little exertion, sufficient roots and vegetables may be grown for family use, and even some oats and peas may be raised.

The writer has sown grain crops and planted potatoes as late as the last of June, and had a large return; but we prefer the month of May. Old country people have no idea of the rapidity with which crops mature in this country, especially in new land.

ON LEAVING HOME.

Emigrants are often induced to make a clean sweep and part with almost everything they possess. It is urged as a reason for this course, that the freight is so high that the cost would overcome the profit. Now, there are many little necessities which when sold realize very little, while those same articles, if kept, would be exceedingly valuable in the bush, and and prove a source of much comfort and convenience to the family as well; therefore, do not sacrifice your conveniences, they will not take up much room, and the freight is nothing in comparison with the comfort they will confer. Remember to bring all your bedding and wearing apparel with you.

THE PASSAGE.

Provide yourselves with some fresh eggs packed in salt, a piece of smoked ham, a few pounds of cheese, some pickles, and if you are Scotch, a quantity of oatmeal cake. Put these articles together, with any other little convenience, in a trunk which you will keep beside you in your berth. All your boxes and luggage will be stowed away in the hold of the vessel, so whatever you absolutely require on the voyage should be put in your berth-room; it will also serve as a seat.

MAKE FOR TORONTO,

the capital of the Province of Ontario, the business centre and seat of commerce. The Free Grant Districts of Parry Sound and Muskoka are reached from it. On your arrival in the city, inquire for Mr. Donaldson, Government Emigration Agent, who will give all necessary information.

A HOME IN THE WILD WOODS.

Having made up your minds to take advantage of the Free Grants of lands, lose no time but proceed without delay. We have known some who on their arrival frittered away their means and time in our cities, and then, when their money was all gone, would make for the bush. Shun such folly,

and do not delay a day, remember 'time is money,' and more, you will require every shilling you have to enable you to clear your farm and to keep you till you raise some crop, so do not waste a penny.

ON YOUR ARRIVAL AT PARRY SOUND

enquire for Mr. John D. Beatty, the Crown Lands Agent, procure a list of lots not taken up, make a thorough examination of the land before locating—this is of great importance—your choice is for life, and your success or otherwise depends to a great extent upon the choice you make. There is an abundance of good land to choose from. Some take almost the first lot they see, without proper examination, and after a time get discouraged. The plan is to take time in the first instance, and make a wise selection, then begin to work with a will.

ON YOUR ARRIVAL AT BRACEBRIDGE,

the centre of the Muskoka District, enquire for Mr. C. W. Lount, Crown Lands Agent, and act on the above advice.

THE ENGLISH AGRICULTURAL LABOURER.

Some time ago we drew attention to the condition of the Devonshire peasant, and the statements then published have brought us several communications both from parties in England and Canada, confirming the view we took, and earnestly pressing the importance of energetic action in the matter of emigration. It appears that the condition of the agricultural labourer in Devonshire has its parallel in many other districts of the "old country," and nothing but the inability of the hard-worked peasants to procure the means of removing to any other locality, prevents them from leaving the scene of so much hardship, and such hopeless poverty. It is from these agricultural districts that the very best class of emigrants for this country might be drawn; and most assuredly there is ample room and need here for all who can be induced or assisted to come over. Once in Canada, they will command a rate of wages for their labour nearly double that which they receive in England, while the cost of living would at the same time be considerably diminished; and above all, they would be cheered by the encouraging prospect of laying by something in store for a future day, of achieving a comfortable independence, and securing a farm and homestead of their own—things utterly chimerical in the land of their birth. One of this class of hard-working peasants, in a letter of earnest appeal for help, to enable him and others situated like him, to emigrate to this country, gives the items of a labourer's weekly expenditure in Berkshire, where the highest rate of wages is ten shillings a week; out of which, rent, board, and all the necessaries of life have to be purchased. The following is the account:

	s.	d.
House rent.....	1	3
Coal and wood.....	1	6
2 Loaves of bread, (16 lbs.)	2	2
2 lb. of Bacon.....	1	10
1 lb. of Cheese.....	9	
3 ounces of Tea.....	6	
1 lb. of Butter.....	1	6
1 lb. of Sugar.....	6	
Salt.....	1	
Pepper.....	1	
1 lb. of Candles.....	6	
1 lb. Soap.....	6	
Starch.....	1	
Total.....	11	3

Leaving one shilling and three pence debt, to be pinched out of the next week's earnings, and no allowance being made for clothing and other indispensable requirements. Contrast this with \$14 a month and board, which any farm hand here can command, and all dissatisfaction or complaints of the hardships of the agricultural labourer in Canada should be effectually silenced; and those who have it in their power to assist their less fortunate fellow country-men to emigrate to this wider field, where their labour is so much needed, should be stimulated to fresh energy in the humane and patriotic enterprise.—*Globe*.

RETURNING EMIGRANTS.

The recent arrival in Toronto of several families from Illinois, en route for Muskoka, affords additional evidence of the difficulty of making a living in some parts of the neighbouring Republic. Some States which are possessed of immense quantities of prairie land and other apparent advantages, are in reality less adapted to farming than other places not apparently so highly favored. Illinois, for instance, has land enough and to spare for all the population she can gather for many years; yet her principal city teems with men out of employment, amongst whom are many who have come in from the country. There is much to militate against their success as agriculturists. It is not the want of land, and as the complaint is made by many, there must be some cause for which the men themselves are not to blame. The fault, probably, lies in the quality of the land, and the unhealthiness of the climate. The land is rich enough; but it is not adapted for growing good wheat. Its unfitness to produce the great staple article of agriculture is a serious drawback. Fever and ague also claim so many victims as to make a serious difference on the welfare of families. The people who are passing through Toronto are not the first arrivals from Illinois. During the past summer we chronicled something of the same kind, and from the reports that reach us and the questions that are asked by men desiring to remove from the States into Canada, it is probable that they will not be the last.

The prairie lands farther North-West offer more inviting fields for farming operations than Illinois. Minnesota is far superior to the southern States; its growth of wheat is enormous, and its climate fine.

Our own North-west Territory, by which is meant those districts watered by the Red River, Assiniboine, Saskatchewan, and neighboring streams, possesses greater advantages than any State to the south of it. The prairie land is of the most fertile kind, there is more wood at the hand of the settler, and there is a plentiful supply of coal. The country farthest west possesses a milder climate than Minnesota, and is equally wealthy.

Accounts of the resources of that portion of British North America, known as the "Fertile Belt," agree in describing the country as the finest on this continent; and there is no doubt when the road is open to Winnipeg a stream of immigration will set in which has never been paralleled in British America. The isolation under which the North-west has slowly thrived will be exchanged for easy and constant communication with the older Provinces. The coming spring will see numbers of Canadians settling in the newly-opened Territory, and the construction of a railway through the Settlement is not far distant.—*Globe*.

INFLUENCE OF TREES ON CLIMATE.

The following interesting paragraph on the above subject is from a recent number of the *Gardener's Chronicle*:

M. de Lesseps, the engineer of the Suez Canal, made his headquarters at Ismalia, which, a few years ago, stood on a dry sandy desert, on which rain was never known to fall. A fresh water canal was cut from the Nile to the old dried-up basin of Lake Gimsab, and trees and shrubs were planted, and irrigated with the water. These grew rapidly. Accompanying this change there has been a corresponding change in the climate. Now, during eight months of the year, Ismalia is one of the most healthy places in Lower Egypt. From June to September the mean temperature is 94°; from October to January 74°; and February to May 45°. Rain was unknown here until two years ago; now, during the year ending with April, 1869, there were fourteen days on which rain fell, and on one Sunday in April a tremendous shower, something that the oldest Arab there had never seen before. Rain ceases to fall on a country deprived of its forests, or only falls in violent storms. Here we see rain returning to the desert on restoring the trees."

CANADIAN CHEESE IN ENGLAND.

A correspondent of the *Belleville Intelligencer* says he visited England this summer, and was pleased to find Canadian cheese coming into favor. In some places he found it bringing a panny per pound more than the best Cheshire cheese. Most of the provision shops had large show cards labeled "Canadian Cheese." There is no doubt that if the business is properly managed, our cheese will continue to gain favor in the British markets. It will be well for those engaged in cheese factories to be very particular to keep out of this market their culls and any that are in the slightest degree tainted, which can be done by selling to local grocers or retaining them till the bulk of the season's make has gone off. Another matter of importance is to have the cheese put in well-seasoned solid boxes that will run no risk of breakage; fasten the tops on in such a way that they cannot be opened without detection, till they reach the hands of the consignee in Britain. The brand of the factory, when known, should become a guarantee of their quality.—*Globe*.

Arts and Manufactures.

ECONOMY IN FUEL.

PETROLEUM AS A PRODUCER OF MOTIVE POWER—A WONDERFUL INVENTION.

An exhibition of a remarkable and important new invention took place in Georgetown, district of Columbia, Saturday afternoon, at the foundry of W. A. Duvall & Co., in the presence of several representatives of the press and a number of other gentlemen, among whom were Judge Hughes, Hon. John H. Rice, General Denver, Professor Hendrick, of the Patent Office, Hon. Oakes Ames, A. B. Mullet, Esq., supervising architect of the Treasury, and others. The process, which has been in course of quiet development in this city for the past eight months, consists in converting crude petroleum to the uses of motive power by the application of steam. For several years

a couple of gentlemen who were largely interested in the oil regions have made the use of petroleum a study and sought perseveringly to adapt to practical ends the vapors and gases which issued from its wells, fissures and every opening in the ground which were simply the result of the evaporation of the petroleum in the earth. Many methods were applied, but chemical difficulties or practical obstacles delayed final success. At length it became apparent that the great secret to be discovered was the application of heat in such a manner as to evaporate the petroleum without carbonization. The various methods were first fully investigated. Furnace heat, no matter how applied, had failed under Government experiments. Heat produced by ejections into the fire of petroleum and steam combined proved spasmodic, irregular and dangerous; but it was certain that the vapour of petroleum would not only burn, but would produce the intensest heat of any known agency. Finally, after much study, the inventors and conductors of the present experiments, Mr. R. M. Whipple and Mr. T. S. Dickerson, invented a very simple apparatus, whereby they sought the evaporation of the petroleum through the application of super heated steam, it being evident to them that the great essential hitherto lacking in the process was a sufficient quantity of hydrogen to prevent the carbon from depositing in a solid state.

For over four months, these experiments have been going on, and are at last producing such results as to leave scarcely any doubt of their complete success. The process is in brief, as follows: Steam is taken from a boiler and passed by a pipe into a fire box, where it is passed through a small iron cylinder known as the super-heater, which increases the temperature of the steam from 500 to 1,200 degrees, as may be required. Thence it passes through a pipe into a cylindrical tubular generator, the petroleum being contained in the space around the tubes, and by its heat rapidly generates the oil into a gaseous vapor. The capacity of the cylinder now in use is eighty gallons of crude petroleum. The gas, as fast as generated, passes into a receiver, which encircles the generator like a water-jacket; thence by pipes into the fire box of the boiler, where it is introduced by jets of burners in such volume as to produce a flame which diffuses itself the full length of a thirty-five foot boiler, and several feet into the smokestack with the apparatus only working at one-fourth its capacity. At the same time, the steam returning from the generator at an inflammable temperature is mixed with the vapor, improving the combustion, increasing the heat, and lessening the consumption.

For the past two months the daily duty of the apparatus is to drive a thirty horse power engine, with a common thirty-five foot cylindrical boiler. Relative tests with Cumberland coal show that the average pressure of steam with coal fuel under the same boiler is thirty-five pounds; the coal fires being raked out and the pumps started, the pressure becomes reduced to twenty-five pounds. The gas fires then being started the pressure is increased to seventy pounds in twenty minutes. This service is performed at an expense of one gallon of crude petroleum per hour—cost, seventeen cents. The capacity of the present apparatus is estimated at twenty thousand cubic feet of gas per hour, equally adapted for fuel or for illuminating purposes. From the fire thus produced, when combustion is regulated, there is neither smoke, dust nor ashes. As a matter of comparative economy the results thus far seem to be of great promise.—*Montréal Telegraph, Feb. 17th.*

MECHANICAL HINTS.

WHETSTONES.—When first putting a new whetstone into use, try water upon it, and if this keep the surface from being glazed or burnished, oil will not be needed. Some stones work better with water than oil. A dry stone is very apt to give a wire edge. It has been said that a little carbonic acid, added to water, will increase the friction on either a whetstone or a grindstone.

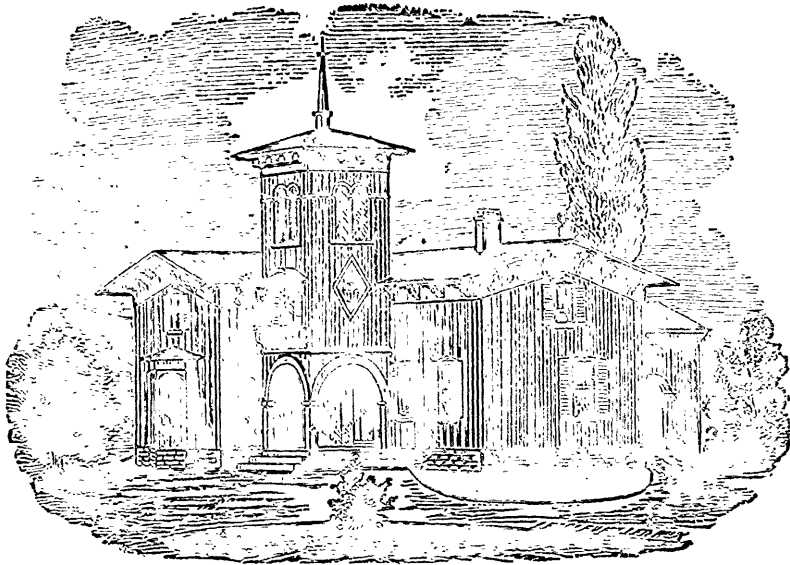
GLUE.—When selecting glue, choose that which has a clear, transparent look, free from clouds or spots, and of a reddish yellow cast, without bad taste or smell. The quality of glue may be very well determined before using, by putting a piece in cold water, for that which is good will swell, but not dissolve. Good glue will only become soluble in water when heated nearly to a boiling point.

CEMENT FOR LEATHER.—A good material for cementing leather, is made of ten parts sulphide of carbon, one part of oil turpentine, with enough gutta-percha to make a thick, flowing liquid. Leather filled with grease cannot be cemented as it should be, and where the parts to be united contain oil, trim them well, fold a cloth over them, and apply a hot iron for a short time, then apply the cement to both parts, and press together until entirely dry.

REPAIRING PUMPS.—When the tube of an endless chain pump has become so large that the buckets or carriers do not fill, take some light sole or heavy harness leather, and cut into circular washers large enough to fill the tubing; cut holes in the centres, and slip them on the chain next above the carriers by taking the links apart, but *do not use too many*; four are enough, let the well be deep or shallow; not more than two should be in the tube at a time. Many, in repairing pumps with leather, put a washer to every bucket, and make the suction too great.

AXLETREES.—We have frequently been asked our opinion upon the different axletrees in use. For buggies and carriages, a good wrought iron axletree, so constructed that the greatest possible amount of strength can be obtained with the least possible amount of weight, is best. For light and heavy waggons, the thimble skein, if well set, we prefer, and next to this the wooden axletree, with crotch skeins in iron boxes. Iron axletrees on lumber waggons are liable to become bent by bearing heavy loads, and but a sixteenth of an inch out of set is required to make a waggon run hard.

PLATINIZED LOOKING-GLASSES.—M. Joulet has published an account of this method of silvering (if we may use the expression) mirrors. The platinizing compound is prepared in the following manner:—200 grms. a very thin platinum foil is dissolved in aqua regia, the solution carefully evaporated to dryness, the solid chloride next placed on a triturating marble, and gradually mixed with essential oil of lavender. When 400 grms. of the latter have been incorporated with the chloride, the mixture is placed in a porcelain capsule and left standing for several days, the fluid is decanted from any sediment, and filtered as flux. For the above named quantity of platinum, the following ingredients are used:—25 grms. of litharge, and 25 grms. of borate of lead, mixed and triturated together with about 10 grms. of essence of lavender; this mixture is next mixed with the platinizing fluid. After a layer of platinum has been formed on the glass, it is fixed by burning it in by placing the glass in peculiarly constructed muffles.—*Scientific Opinion.*



AN ITALIAN FARM HOUSE.

THE accompanying design for an Italian Farm House was furnished the *Rural New-Yorker*, some years ago, by Mr. C. B. RIDER, of Pike, Wyoming Co., N. Y. We admired it very much when it first came under our eye, and having obtained use of the engraving of it, have pleasure in embellishing a page of the *Ontario Farmer* with it. Mr. Rider says:—

"I have long been impressed with the idea that the Italian style is the one most perfectly adapted to the wants of the farming community; accordingly I have selected it for the accompanying study.

CELLAR.—The cellar requires 14 cords of stone. It will be found as cheap to make the cellar under the whole building, as the walls should be of the same height, seven feet throughout, to prevent unequal settling. Cellars are generally dug too low. My excavation is only 18 inches. The practice of setting stone edgewise for "underpinning" should be avoided; they are better laid flat, taking care that none reach through the wall.

THE FRAME.—A well-made "balloon" frame is much cheaper and better for all houses of moderate height than a timber frame. It adapts itself better to circumstances. It is more *plastic*, so to speak. My plan of constructing a frame is as follows:—The sills are 6 by 8 inches, laid flat, the studs are 3 by 4 inches, "toe-nailed" to the sills, two inches from the outer edge. This space of two inches is afterwards filled out with 2 by 4 inch "ribs" set diagonally, 3 feet apart, and nailed to the studs at each intersection. These ribs serve as braces to the building, besides acting as supports for the outside boarding. I nail them on over doors and windows, and afterwards saw out those that interfere with the openings. It will be seen that it requires no more lumber or labor than to put them on horizontally, yet they make the building much stiffer. My house might be rolled over and not be crushed. The Italian style requires a low roof. Mine is one-fifth pitch.

CONSTRUCTION.—The order of putting the house together is:—The cellar walls, sills and lower joists, studs and upper joists, rafters, ribs, vertical boarding, window frames, cornice, and, lastly, the roof. All the joists are 18 feet long, 2 by 8 inches, and 16 inches apart, so that the lower joists will rise 2 inches above the sills, which are 6 by 8 inches. This arrangement is for the purpose of giving the sills plenty of air, as nothing contributes more to the destruction of timber than close confinement. The space thus left between the floor and sills must be filled with cobble stones and coarse gravel, to allow the air to circulate, and keep the rats out. I prefer machine-planed vertical boarding to clapboards, but they must be of uniform width, and 11 inches wide; battens 2 inches.

THE ROOF.—Zinc or copper gutters must be used where the tower joins the main building, and at the angles of the roof.

THE TOWER.—This will be considered by many a needless expense. I do not think so. The lower story forms the open porch, the second may be used as a library or bed-room, and the third as an observatory, a summer sleeping room, a room for drying herbs, &c., and as a means of reaching the roof, in case of fire, &c. It is the most picturesque and not least valuable part of the house. At all events the style requires it.

COST.—Here, where "clear stuff" costs \$24, "house boards" \$16, and "barn-boards" \$8, hemlock scantling \$7 per thousand; stone \$6 per cord; and joiner work \$1 50 per day; this house can be built for \$1,200. If the builder furnishes stone from his own land, and does a considerable part of the "coarse work," it can be built for much less.

We regret that we cannot furnish plans of the interior division and arrangement of this house. These however only answer the purpose of studies in most cases. People have their own ideas about interior divisions, and these, with the same external design, admit of great diversity.

HOW STATUARY IS MADE.

But little is known of the art of sculpture by the masses in this or indeed any country. The first thing the sculptor does is to model or fashion the figure in clay. He first builds a skeleton of iron, and then puts the clay upon it, and adds or takes off until the work is completed. He then transfers the model, or reproduces it in plaster of Paris. This is done by covering the clay with liquid plaster to the depth of about one and a half inches, more or less, according to the size of the model—a life-sized picture would require the plaster to be laid on at least three inches in depth.

The plaster is then allowed to become perfectly hard, or set as it is called. The clay is then taken out, and the plaster will be found to be a mould in which to cast the fac-simile of the original model. An additional quantity of plaster is then mixed with water and poured into the new made mould; in thirty or forty minutes it will become set and hard. The mould is then taken or cut off by means of knives or chisels.

The next thing is the process of cutting the head or figure in marble. This is entirely mechanical, and is accomplished by measuring instruments, called pointed machines. They are so arranged as to give the exact distances, points, depths, widths and lengths of every part of a head or figure; these are pointed to or measured on the marble block, and the workman cuts to a hair, according to measure, and mathematically certain. Doing a bust in marble is simply mechanical; originating in the clay model is the work of the artist. The process of reproducing works in plaster is carried on in New York very extensively.—*Rural New Yorker*.

SHIPBUILDING IN THE WEST.—A correspondent of the *Express*, writing under date, Annapolis, Feb. 7th, says: "The present good sleighing has given quite an impetus to business in these parts. Farmers are very busy, getting out cordwood, &c., lumbermen, mill-owners, &c., are plying their avocations with unusual vigor. The sleighing was never better all along from Yarmouth, though the road is contiguous to the bleak shore of St. Mary's Bay. Having had occasions of driving frequently from Weymouth to Annapolis, I had an opportunity of observing that shipbuilding suffers nothing, though we are under Dominion rule. Mr. Goodwin, and Mr. Campbell, Weymouth; Mr. Everett, St. Mary's Bay; Mr. Raymond, and Mr. Jones, Digby; Mr. Rice, and others, Hillsborough; Mr. Porter, of Clementsport, are all engaged in building vessels, varying from 800 tons down to 200. I should mention also, that a Company formed last summer at Granville Ferry, Annapolis Co., have sent to sea a very superior vessel of over 600 tons. Should the present excellent weather continue, there is every likelihood of the ensuing season being a most prosperous one."—*Halifax Citizen*, 10th Feb.

WELDING STEEL TO IRON.—To make a good weld, the steel should be heated to a less degree than the iron, as it is more fusible. Sal ammoniac cleans dirt from steel, and borax causes it to fuse before it obtains that heat which will cause it to burn; consequently a mixture of these two substances form one of the best materials for welding.

Hearth and Home.

FARMING FOR BOYS.

CHAPTER IV.

IDLERS IN THE BARN.—UNCLE BENNY'S NOTIONS.—
HOW TO MAKE A BEGINNING.—LEAVING THE
FARM.—BOYS AND GIRLS.—DON'T
QUIT THE FARM.

By this time the party found themselves so well chilled as to make an indoor lodgement of some kind desirable. The kitchen being prohibited ground, for that day at least, Uncle Benny pioneered his way to the barn, where the boys were glad enough to wrap themselves in horse-blankets, and burying their legs deep in the hay, they were presently more comfortable than when sitting in everybody's way around Mrs. Spangler's smudgy stove. Uncle Benny, covering himself with a huge buffalo-robe, sat down upon a low meal-chest, and leaning back against the front of the manger, crossed his legs as comfortably as if sitting by the fireplace. Very soon the hired man came in. He had been left for the day unprovided with work, simply because it rained; that being sufficient to take the employer off to the village, to sit until the weather cleared up, listening to the unprofitable conversation of a country tavern. But his wages went on just as if he had been at work.

It was therefore a strange company of idlers thus assembled in the barn, not one having anything to do. The hired man might easily have found enough to employ him in the barn, or shed, or at the wood-pile, while it rained, and when it ceased for the afternoon he could have busied himself out of doors, had he been disposed to seek for tasks that his employer had neglected to provide. But he was one of that set of helpers who do nothing not distinctly set before them,—a sort, by the way, that no good farmer will ever employ. This man, seeing a gate open which he knew ought to be shut, would never think of closing it unless some one told him to do so. Unless he stumbled over a hoe or any other tool which some one had left in the path, he would be the last to stop and pick it up, and carry it where it belonged. He required, in fact, as much looking after as any of the boys. Uncle Benny used to say of this man, that he was the most unprofitable kind of hand to have on a farm.

One of the old man's principles was, never to have a hand about him who required telling more than once to do anything. Another was, that, as he provided a place for everything, so when an axe, a hoe, a spade, or any other tool had been used, it must be put immediately back in its place, that when next

wanted it might be found, and that any hand who refused to obey this law was not worth employing. These excellent ideas he took great pains to impress on the minds of the boys, teaching them the value of order, method and regularity. He did once or twice undertake to lay down the law to Mr Spangler also; but the latter showed so much indifference, even going so far as to say that he always found it too much trouble to put things in their places, unless it was a horse, that he gave him up as incorrigible.

The boys were often surprised, as well as amused, at the nice precision with which Uncle Benny lived up to his favorite law of a place for everything, and everything in its place. He would often send them up into his chamber to get something out of his tool-chest. Though it was full of tools and other matters, yet he seemed to have a perfect chart of the whole contents imprinted on his memory. He could tell them the exact spot that every tool occupied, which drawer held the screws, which the four-penny or six-penny nails, which held the carpet-tacks, and so on to the very bottom. He often said that he could go to it in the dark and lay his hand on anything he wanted. The boys always found things exactly where he said they were. Their experience with this tool-chest was so novel, that it made a great impression on them, and they insensibly fell into the old man's orderly habits about keeping things in their proper places.

If Uncle Benny had thought that he had any authority over the hired man, he would have soon put him to work; for he had a habit of never letting anybody stand idling about him when there was anything to do. The man's example, moreover, was hurtful to the boys. Between him and Mr. Spangler the boys would have been in a fair way to grow up complete slovens; for boys, in a general way, are literal imitators of the good or evil that may be set before them.

Uncle Benny had a hard contest to counteract the effect of these daily patterns of bad management. But his manner was so kind and sociable, he cultivated his boyish affections so assiduously, he entered so fully into all their thoughts, and sympathies, and aspirations, and he was so ready to answer their numerous questions, as well as to lend them his tools whenever they asked him, that in the end they looked up to him as by all odds the best man on the place. The last good turn of buying for them the very kind of knife they had so long coveted, fixed him immovably in their affections. It was a small matter for him, but a very great one for them.

It is thus that the education of a child begins. The school-room, and the teacher who may be there enthroned, are very far from being the only means.

It goes on without reference to the alphabet, and even in advance of it. It begins, as some one has beautifully said, "with a mother's look,—with a father's smile of approbation, or sign of reproof,—with a sister's gentle pressure of the hand, or a brother's noble act of forbearance—with handfuls of flowers in green and daisied meadows,—with birds'-nests admired, but not touched,—with creeping ants—with pleasant walks and shady lands,—and with thoughts directed in sweet and kindly tones and words, to incite to acts of benevolence, to deeds of virtue, and to the source of all virtue, to God himself."

The very tones of Uncle Benny's voice, his lessons of instruction upon every day topics, his little kindly gifts, his confidences, his commendations, and sometimes his reproofs, were all important agencies in the education of these neglected boys. He lent them books and papers to read, taught them lessons of morality, and was constantly directing them to look upward, to aspire, not only as men, but as immortal beings. The school-room would have been highly advantageous to them; but, seeing that they were allowed only a winter's attendance there, they had an able mentor in the good old man whose lot had been cast among them.

These four had not been long in their comfortable quarters in the barn, when Tony broke silence by saying: "Uncle Benny you said that you would tell us how a boy should make a beginning. Will you tell us now?"

"Ah, Tony," replied the old man, there are fifty ways in which to make a beginning. But the first steps in any beginning that will go on prosperously and end happy are these. Fear God, honour your parents, be strictly honest, never violate your word, nor do any act which, if it afterwards become known, will cause you to feel ashamed. You saw that pedler boy. He must have made a beginning with but little more than a shilling, perhaps not so much. But he must have had pluck as well as the shilling; for the shilling would have done but little for him without the pluck to set it going. No matter how small, it was a beginning; and if a boy never begins he will never come to anything useful. He turned his shillings into dollars, his dollars into merchandise, such as you saw in his basket, and then his merchandise into more dollars still. That boy will be sure to prosper. A beginning shows that a boy is in earnest to do something, that he has a head, and is not like a fiddler, all elbows. If it set him thinking, it will keep him thinking, and this thought will improve his chances by detecting errors and showing him how to avoid them. Half the poor outcasts of this world were made so because they hadn't the pedler-boy's courage,—the courage to begin. Had they made a start, they might have

prospered as well. You are both desiring of doing something to make money."

"Yes, indeed!" shouted the boys with one voice.

"Well," replied Uncle Benny, "a farm is a poor place for even a smart boy to make money on, unless the farmer has heart and soul enough to give him a chance. That don't happen as often as it should for farmers think too much of what only themselves want, and too little of what their boys do. This farm is about as poor a one, I fear, for the boys to make money on it as any one I ever saw, unless Mr. Spangler thinks, as I do, that they ought to have a chance."

"Won't you ask father, some day, to let us try?" inquired Joe.

"But I don't want to stay here," added Tony. "I want to go to the city, to New York or Philadelphia, to make money there."

Uncle Benny was surprised at hearing this avowal from Tony King. It was the first intimation he had ever received that Tony wanted to quit farm life for city life. Though he was aware that the poor fellow had no living friends—at least none that he knew to be living,—as the best of them, his father's brother had gone to the West some ten years before, and had not been heard of since, yet he had not suspected Tony of having even thought of quitting the farm.

He could not help mentally agreeing with him, that for an ambitious boy the prospect was not encouraging. He was surrounded by one of these combinations of unfriendly circumstances that almost invariably drive boys from the country to seek their fortunes in the city. No attractions were set before him to make the farm a pleasant home. It seemed as if Mr. Spangler had wholly forgotten that he had once himself been a boy, for he evinced no sympathy with the young minds around him. His own sons had no recreations of his suggesting or providing. Their holidays occurred only when it rained. No one had thoughtfully supplied them with fishing-lines, though there was capital sport within a walk of two miles. What little they could do at fishing was always done in a hurry, sometimes in the rain, sometimes on a Sunday. Those were the only times when they could be spared from work. If they set snares for rabbits or muskrats, they were the rude contrivances which their school-mates had taught them to make. They had no pets, for they had never been taught a loving disposition,—no pigeons, no chickens, no beehive, not even a dog. The home affections had been so sadly neglected, that even in the hearts of the Spangler boys there was an unsatisfied blank. In Tony's there was a still greater one, for he was an orphan.

There was also quite a noticeable difference between the treatment extended to the boys and that

which the girls received. The three boys slept in a great garret room, a rough, unfinished apartment, hung round with cobwebs, and open enough to permit the wasps to enter and build long rows of nests. There was nothing to educate the eye to neatness or order—no curtains to the windows, no carpet on the floor, no chairs on which to sit while dressing or undressing, no looking-glass or wash-stand—nothing, in short, to give a cheerful aspect to the place in summer, or make it comfortable in winter. Any room seemed good enough for the boys.

Yet there was a better chamber on the floor below, carpeted and furnished. But though strangers never came to that house for entertainment, still it was too good a room for the boys. Thus their personal comfort was neglected. They saw nothing around them to make home attractive, nothing to invest it with charms exceeding those of all other places. Hence a disposition sprang up to look abroad for comfort, for counting the chances of doing and living better in a new location. There was a growing anxiety for the time to arrive when they should be free to quit an occupation which they upon whom rested the highest obligation to make it agreeable had made distasteful.

On the other hand, the girls in this household occupied one of the best chambers, carpeted and furnished, with a dressing-bureau, chairs, and tables, with curtains to the windows, and a variety of accessories. It is true that there is a natural aptitude in women for making even bare walls attractive,—for collecting around them conveniences and elegances of their own devising, and with very meagre materials investing their especial chamber with an air of snugness, cleanliness, and comfort beyond the capacity of the other sex. Such tendencies are inherent in women. But the materials for achieving these results must to some extent be placed within their reach. Here the girls were provided with the essentials—a rag carpet, it is true, and quite decrepit chairs and tables—but their native taste contributed the rest. But from the boys even these essentials were withheld; and being deficient in the housekeeping instinct, they lived on in their comfortless garret, conscious of its deficiencies, but without the tact necessary to supply them. If others observed this, it did not matter; it was only the boys' room, and was good enough.

Moreover, of a stormy day, when out-of-door work was impossible, the kitchen was always large enough to contain the girls without their being in anybody's way: but there was never room for the boys. They had wet clothes, muddy shoes, and were complained of as sitting down in the most inconvenient places round the fire. But it was because no others had been provided for them. They soon learned

they were not welcome there,—the room wherein of all others, a farmer's boy conceives he has the right of entrance and domicile, was made so unpleasant that they generally kept away from it. They were treated too much as inferiors, as of no account except of being good for so much work. It is such neglect, such treatment as this, that drives hundreds of well-meaning and deserving boys from the farm to the city. No doubt there are many who live through it all, and remain at home. No doubt there are farmers' sons who develop superior talents for some particular branch of science or art, for the successful practice of which a great city is the only remunerative field. It may be proper for such to leave the farm, as every man should go where he is most wanted, and the world may be benefited by such enlargement of their field for usefulness. They are evidently born for some other pursuit than that of farming.

It was this general neglect that was working on Tony's active mind so strongly as to lead him to think of adventuring on a city life. Though he knew nothing of the risks of that, yet he understood the discomforts of this. Boy-like, he was willing to encounter the former, though unknown, in order to escape from the latter, which he knew too well. The exhortations of Uncle Benny had so generally ended in a condemnation of Mr. Spangler's mode of farming, without effecting any marked improvement in the management, that Tony began to despair of an amendment in which he could participate. All boys who happen to be born on farms are not calculated to make good farmers. Some are so constitutionally organized that their tastes and talents run in another direction. Taking that they succeed; but adhering to the farm, they would fail. Others dislike farming because of its hard work,—no one whose duty it is taking pains to diversify that work by interweaving amusement or recreation, or the stimulant of juvenile profit. Others can see in farming no prospect of becoming rich.

But Tony did not belong to either of these classes. He had been born in the country, had no aversion to hard work, and would prefer remaining on a farm; but he was getting tired of Mr. Spangler. It was singular, however, that, while thinking of making a change, it had never occurred to him to go away and engage with a really good farmer, where he would be sure to learn the business thoroughly. Instead of entertaining this sensible idea, he had thought only of a plunge into the city. But Tony was young in the experiences of this world, and had much to learn.

The dissatisfaction thus manifested by Tony to the farm life around him was a new difficulty for Uncle Benny to smooth away. Heretofore, he had

had only Spangler's lapses and mismanagement to contend with, but here was trouble in a new quarter. Yet his concern for the welfare of these boys was so great, and he was so well satisfied that they could do pretty well at farm life if there was any way of making them contented, that he resolved to do his utmost toward counteracting these unexpected symptoms of restlessness. He was quite pleased that the youngest boy, Bill Spangler, came into the barn just in time to hear Tony's remark about quitting the farm, as he too would have the benefit of his reply.

As the old man was a great reader, he generally carried a newspaper of some kind in his pocket, from which he was in the habit of reading aloud to the boys any article that struck him as being likely to amuse or instruct them. Sometimes, when they had been debating or discussing a topic with him, he would produce a paper containing an article on the very subject they had been talking about, and on his reading it aloud, they found in it a remarkable confirmation of what he had already told them. As it was in a newspaper, the boys considered that it must be true, and as it always supported him in his views, they wondered more and more how the old man knew so much, as well as always to be right. These readings became so popular with the boys, that, whenever a chance offered, they uniformly inquired if there was not something more in the paper that was worth hearing.

The fact was that Uncle Benny, discovering how tractable these boys were, and how much they needed the right kind of instruction, had subscribed for two or three papers which he knew contained such reading as would be useful to them. After examining them himself, he would select some subject discussed or explained in them, which he thought would be important for the boys to understand, and then, putting the paper into his pocket, would give them, on the first suitable occasion, a verbal account of the matter, or start a discussion about it. After it had been pretty thoroughly debated and turned over, he would produce the paper and read the article aloud. Of course it confirmed all that he had been saying, and as it was in print—for they saw it there—it clinched the argument beyond dispute, and must be so.

But this stroke of ingenuity was not adopted by Uncle Benny for the purpose of impressing his audience with an exalted idea of his superior knowledge or wisdom, but more as an attractive mode of interesting their minds in subjects with which it was important that they should become well acquainted. It was surprising how much his method of proceeding interested them. There has been a great deal said of the usefulness of farmers' clubs, and of the addresses delivered before them. No one

will doubt their having done good service to the farming community, or that the more of them we have the better it will be for us; but, considering the size of Uncle Benny's audiences, and the general lack of knowledge pervading them, it may be doubted whether his lectures, delivered sometimes in the barn, sometimes on the rider of a worm-fence, sometimes even when hoeing up weeds, were not quite as productive of good as many others having not only larger audiences, but greater pretensions.

His system had another advantage. The boys always wanted to see the newspaper for themselves to have it in their own hands. This was exactly one of the results the old man was desirous of bringing about, as they were sure to read over the articles he had himself read aloud, besides studying the remaining contents. As he had great faith in the value of agricultural papers among farmers' boys, as well as among farmers too, he kept the boys supplied with all the reading of this kind they desired.

Now it happened, oddly enough, when Tony King said he wanted to give up farming and go to the city, that Uncle Benny had that very week been reading an article in a newspaper which spoke about farmers' boys rushing into it. The old man, being equally opposed to their making such a change, laid it down to Tony very plainly indeed. He told him the idea was absurd; that he didn't know what was best for him; that his great want was to learn to be contented where he was, and to wait until he was at least five years older and wiser before he thought any more of changing. Then, by way of settling the matter, he drew the paper from his pocket and read as follows:

"The very worst thing a country boy can do is to leave the farm and come to the city, in hopes of doing better. Yet they come here every week by dozens, giving up good places where they are well taken care of, and pitch in among a crowd of strangers who take no notice of them, or give short answers when they are applied to for a situation, or even a small job. They take it for granted that there is always plenty to do here, and that it is an easy thing to get a situation in a store or counting-house, where there is little to do and good pay for doing it. They see that the clerks and shop-boys who sometimes come among them in the country are well-dressed and smart-looking fellows, with plenty of money in their pockets, which they spend as freely as if there was no end to it,—gunning, boating, hiring carriages to drive the girls about, &c. They think that these smart clerks must have a capital life of it in the city. They also now and then hear of a poor country boy who went into a

city store and made a fortune in a very short time. Thus they get to envying the life of the town boys, and are uneasy and restless until they make the trial of finding out how difficult and dangerous such a life is. They see only the bright side of the picture.

"But all these boys are greatly mistaken. It may look very genteel and easy to stand behind a counter and do nothing but measure out goods, but it is close and confining labor nevertheless. If it is cleaner work than scraping up a barn-yard or currying down a horse, it is not half so wholesome. Besides, it is not an easy matter to get a situation in a store. Our city is full of boys born among us, whose parents find great difficulty in obtaining places for them. Many of these boys go into stores and offices without getting a dollar of pay. The privilege of being taught how to do business is considered compensation enough—they actually work for nothing and find themselves. Our store-boys have no time for play. They have no green fields to look at or ramble over, nothing but dust, and mud, and hot bricks, with quite as much real hard work as the country boys, only it is of a different kind. What boy of the right spirit would desire to come here and merely run of shop errands all day, learning nothing but how to go about town, when he could stay in the country, sure to learn how to get a living? Besides, a boy here is surrounded by temptations to ruin, and the poorer he is the more certain are they to lead him astray. Where one such does well, there are two who turn out thieves or vagabonds. We say to you, boys, stay on the farms where you are. If you are determined to come, don't come without you have some friend here who will receive you into his house, provide you with employment, and take care of you. But, anyhow, wait till you are older, say twenty-one at least. Then, if you don't think better of it, you will be somewhat able to fight your way, for here there is nothing but fighting."

As the old man read this very deliberately, the boys listened with the utmost attention. "There!" said he, when he had finished, "that man knows what he says. He lives in the city, and understands about it. You see that he advises you exactly as I do."

This unexpected confirmation had a powerful effect on the minds of all the boys. It applied so directly to Tony's case, as to make him think differently of the chances of a city life. As usual, he wanted to see the article for himself, and, beginning to read it aloud to the other boys, the old man left the barn, thinking that a little free conversation on the subject among themselves would do no harm.

CHAPTER V.

SOMETHING TO DO.—THE VALUE OF PIGEONS.—BUYING PIGS AND PIGEONS.—THE OLD BATTLE GROUND AT TRENTON.—HOW TO KEEP PIGEONS.

No law of our physical nature is more imperative than that we must exert ourselves,—we must have something to do. If it everywhere applies to men, it acts even more energetically upon boys. Activity, mental as well as bodily, is a necessity of boyhood. Nothing is more irksome for a lad than to be required to sit still for an hour, because that implies the doing of nothing. Yet give him hook and line, add a worm or a grasshopper, and anchor him within reach of a ditch with probably only a single fish in it, and he will wait hours in excited expectation of a nibble. It passes for fishing, and is therefore enough of action, for the time, to satisfy the desire for activity which gives life and animation to boyhood. This longing after action, innocent in its direction, is to be encouraged, not repressed. The rollicking fellow who runs, and leaps and halloos, is as worthy of having his taste for amusement cultivated, as the quieter student whose life is in his books, or the more calculating youth whose mind begins thus early to run on the profits of trade. The general trait develops itself differently in each, and in all it should be promoted and encouraged. If checked by violence, or deadened by neglect or want of opportunity for indulgence, discontent succeeds. An urgent necessity of the boyish nature thus remaining ungratified, relief is sought in distant scenes or objects which promise to afford it.

These boys on Spangler's farm were therefore all anxious to be doing something for themselves. It was not mere work they were coveting, as of that they had sufficient, but some little venture that they would prize as being exclusively their own. Uncle Benny comprehended the case so fully, that he took the first opportunity to lay the matter before Mr. Spangler, and to urge upon him the necessity of giving the boys a chance. He said it would be a very small thing to let Tony keep a pig, while Joe could have a flock of pigeons, and Bill might have a brood of chickens. Spangler could n't see the necessity for it, did n't know what the boys wanted with all these, said that every one of them would eat corn, and enquired where that was to come from; besides, where were they to get pigs, and pigeons, and chickens to begin with? The idea of cheering them on by a little aid did not enter his mind. He had never yet put himself out of the way to gratify his boys.

As to the corn which the new pets were to eat, the old man said, if he would permit them, they could raise it for themselves. They could easily plant and cultivate a couple of acres at odd times,

—before breakfast or after quitting farm work; and if they used any of his while theirs was growing, they could replace it when their crop came in. Uncle Benny pledged himself that he would see to all this, that he would make the boys keep accounts of what they used, and indeed of all their other expenses, and that Mr. Spangler should lose nothing by it. As to the land they were to have, he told Spangler that he could spare it well enough; that he had now at least three times as much as he knew how to farm properly; that he had good boys about him who deserved to have some favors shown them; and wound up by warning him that there was great danger of all three becoming discontented, and disposed to leave him as soon as they could, unless their wishes were in some way gratified.

It was a very great struggle for Spangler to yield to proposals of a kind so new to him. But even his wife had less influence over him than Uncle Benny. If any other person had made a similar proposition, he would have silenced him by a flat refusal. Even as it was, it went very hard with him to consent to any part of it. He clung to the two acres the boys wanted, as if it was all the land he had; as, like many other men with large farms, he had never imagined that he had too much. But he objected strenuously to the boys being permitted to keep pigeons, as he said they would attack his wheat-fields, and eat more grain than their heads were worth. Besides, they would fly away for miles round, and the neighbors would complain of the damage they would be sure to do, the blame of which would all rest on him.

But the old man reminded him that, as to his wheat crop, he starved it so effectually that no flock of pigeons could make it much poorer. Besides, he said, it was a great mistake to suppose that pigeons on a farm, even when kept in large numbers, were in the habit of injuring the grain crops. He knew that farmers generally considered them as thieves and depredators, and so shot them when they came upon their grounds; but they condemned them ignorantly, and shot them unwisely, just as they did king-birds because they were believed to eat up their bees, or crows for pulling up their corn. The king-birds that are frequently seen darting at the bees about a hive, eat up the drones only, as anybody could ascertain who would kill one and open his crop. So, where the crows pulled up one hill of corn, they devoured a hundred grubs. In short, he made use of the occasion to give Spangler a lesson on the history and habits of our common pigeons, that enlarged his knowledge of the subject very considerably. He told him that in England pigeons were protected by law from being killed, by a penalty of ten dollars in

our money, and that in foreign countries they had been raised for centuries as a source of profit. They are all fond of the seeds of weeds and many wild plants, and are most industrious workers in devouring them. It is in search of such seeds that they are seen alighting in the fields at all seasons of the year, as well when no winter grain is ripening as when it is. They thus do the farmer a great service in keeping his fields clean, by preventing an increase of weeds.

No matter at what time of year a pigeon's crop may be opened, it will be found to contain at least eight times as much of the seeds of weeds as of wheat, or rye, or corn, or other grains. It is also very remarkable, that the grains thus taken from the fields are defective ones. They take only the worthless seeds. For these reasons these birds should be regarded as the best weeders that a farmer can employ; for while he merely chops up the weed, often when it is so well grown that it ripens its seeds on the ground where he may have left it, the pigeons come along and make clean work by eating them. The farmer removes merely the weeds, but the pigeons remove the cause of them.

Any one who has kept these birds on his premises must have noticed how fond they are of pecking among the rubbish which is thrown out from a barn-floor after threshing wheat or other grain. They will search there, for many days together, hunting out the shrivelled grains, the poppy-seeds and cockle, and other pests of the farm, thus getting many a good meal from seeds that barn-yard fowls never condescend to pick up. When the latter get into a garden, they scratch and tear up everything, as though they were scratching for a wager; but a pigeon is better bred by nature,—he never scratches; hence he disturbs no seeds the gardener may have planted. When he gets into the garden, it is either to get a nibble at the pea-vines or the beans, as he is extravagantly fond of both, or to search for weeds.

This fondness of the pigeon tribe for seeds of plants injurious to the farm is much better known in Europe than with us. At one time, in certain districts of France, where large numbers of pigeons had been kept, they were nearly all killed off. These districts had been famous for the fine, clean and excellent quality of the wheat raised within them. But very soon after the number of pigeons had been reduced, the land became overgrown with weeds that choked the crops. The straw, in consequence, grew thin and weak, while the grain was so deficient in plumpness and weight as to render it unfit for seed. Every farmer remarked the difference when the districts had plenty of pigeons and when they had only a few. The people therefore returned to pigeon-keeping. Every landlord,

in renting his farm, required his tenants to build a pigeon-house or dove-cot, in order to insure crops. Many of these were very expensive structures. It has been further observed in other districts in France, that where pigeons are most abundant there the wheat-fields are most productive, and that they never touch seed which has been rolled in lime.

The defence of this beautiful domestic bird which Uncle Benny thus made in reply to Mr. Spangler's objections quite disarmed him; for he had great respect for the old man's superior knowledge; and as it appeared the pigeons would not only do no harm, but would really be likely to do much good, he consented to all that was required,—the boys should have pigs, fowls, and pigeons, and two acres of ground on which to raise their food.

This extraordinary concession was made just before Christmas. It took the boys so by surprise and they were so excited by the prospect before them, that, after going to bed, they talked it over during half the night. They had not been much used to receiving Christmas presents, but if they had, and had now been overlooked, they would not have missed them. Tony's gratification was so lively that it gave a different turn to his thoughts. He forgot all about wanting to try his luck in the city, and a new ambition sprang up to remain on the farm. A motive had been created, a stimulant had been set before him; there was a prospect of his doing something he had long desired,—make a beginning.

Farmers do not understand the value to themselves, or the importance to their boys, of little concessions like these. They are the surest agencies for developing the self-reliance of a boy. When working for himself, labor becomes pastime,—it is sweetened by the hope of reward. Lessons set before the mind under such circumstances become indelibly impressed upon it, for personal experience is the best teacher of all. The farm, instead of being an object of aversion, becomes one of preference. The boy's treasure being there, there also will his heart be found. Yet this simple process for imbuing him with a fondness for rural life, and of weaning him from his undefined longings after the trials, the hazards, and the disappointments inseparable from venturing on a life in the city, is so generally neglected as to become the fruitful cause of numberless desertions of the country homestead.

As Christmas is everywhere a holiday, so it was on the Spangler farm. The boys, exuberant and gleeful, were in ecstasies when Uncle Benny told them he intended they should go with him to Trenton, see the sights, and look after pigs and pigeons. That city was but a few miles away.

They put the horse to the wagon, and drove off over the frozen highway which much travel had beaten perfectly smooth. Of course their whole conversation was about what they were to see in Trenton, of their prospective pets, what they would do, and how much money they would make another year. Uncle Benny underwent a crossfire of questions, and listened to hopes and fears, most incessant and diversified. But what else could such hopeful boys be expected to indulge in? It was the first real jubilee of their lives, and the ride was memorable for them all.

As they neared the city, they heard the beating of drums and the firing of distant musketry. Coming still nearer, the firing continued, and then Uncle Benny informed them that that day was the anniversary of the great battle of Trenton, when Washington surprised and captured the Hessians, and that the military companies of New Jersey and Pennsylvania were then holding their annual celebration of that memorable event, by repeating in the streets and suburbs of Trenton, the same movements, the same attacks, retreats, and surrender, as in the battle itself. The boys begged him to whip up and get in so that they might witness the whole affair, as they had been so shut up at home as never to have had seen such a company of soldiers together. The old man, ever ready to confer a pleasure, hurried up the horse, and had him snug at a livery stable just as the sham-battle was fairly under way.

Then the boys saw a body of troops marching down State Street. These represented a party of the Hessians who had been suddenly routed out of their quarters by the Continentals. As they came down, they occasionally faced about and discharged their muskets at an imaginary body of the Continentals coming in from the country. Then another division of Americans came down, by a different street, upon a second party of the Hessians, exactly as it had been when the real battle was fought. These also fired, as did the Hessians, and for some time the crackling of guns rattled briskly through the city. Then came bayonet charges and countercharges, followed by the retreat and complete surrounding of the Hessians. Presently the boys saw them lay down their arms and surrender to the Americans on the very spot where the enemy had surrendered in 1776. It was an unexpected treat for the boys to witness this exciting exhibition, and for a time they thought nothing of the errand on which they came to Trenton.

As might be supposed, the streets were thronged with citizens, while the doors and windows of the adjoining houses were occupied by spectators of the scene. The ladies waved their handkerchiefs, and the crowd threw up their hats and shouted as

they perceived the victory to be complete. When the Hessians surrendered, they were treated with quite as much attention as rebel prisoners of the present day have undeservedly experienced. Instead of having their arms taken from them, their pockets searched, and being marched off to prison, the Continentals escorted them to the neighboring taverns, where they got the best kind of a dinner. It is quite probable their captors were equally hungry and thirsty after the terrible battle they had fought, and out of compliment to their prisoners went through a similar exercise with toddysticks and carving-knives. The boys were surprised to find, when the battle was over, that nobody had been hurt; but had they remained in town until night, they would have seen a great many wounded men limping about the streets, some of whom appeared to have been shot about the head or in the neck, and who limped so badly as to require both sides of the pavement to enable them to keep on their feet. There had been instances of these wounded men limping over even into the gutter. But the boys witnessed none of these exhibitions, they thought the sham-battle the grandest incident of their lives.

Beside the citizens, there was a large crowd of people from the country, who had come in to be spectators of the celebration. Though it had been regularly kept up, yet they did not seem to tire of it, and flocked in just as regularly as the anniversary came around. Getting out of this dense crowd Uncle Benny took his party down Greene Street to the narrow old stone bridge that crosses the Assanpink Creek. As the boys were greatly interested in all they saw, and as the old man had recently been reading to them this part of the history of the Revolution, no doubt in his own mind intending to take them to see these very things, he pointed out the bridge as being the same old one where the British had several times attempted to cross and get at Washington on the heights upon the other side of the creek, and that here it was they had each time been driven back with terrible slaughter. Here, too, it was that the young girls, dressed in white, had scattered flowers in the road in front of the great hero, and sung their beautiful welcome, when he was passing over the bridge after the war had closed.

They stayed a long while on the bridge, listening to what he said of it, and talking over these old times.

"Here, boys," said the old man, "is the same bridge, here are the same streets, on which these great battles were fought, but the men who fought them are all gone, not one of them is now alive unless it be a solitary old pensioner. Even the young girls are all gone."

"But," said Bill, the youngest of the three, looking up into the old man's face, "are not you an old Revolutioner?"

"Not yet," replied Uncle Benny. "I am old, but not old enough to be a Revolutioner."

From this spot they wandered over the outskirts of the city, looking into the pig-pens that abound there, in search of an eligible porker with which to make a beginning. They went about leisurely, and of course saw a great variety, some in nice clean pens, and some in pens so foul that it was evident the dirty pigs were not doing nearly so well as the clean ones. All this was carefully pointed out to the boys, and they did not fail to remark the difference. At last they came to a man who had a number of what he called the Chester County Whites,—fine round fellows with short legs, short ears, short faces, and long bodies.

This was the kind Uncle Benny had been seeking for. The boys themselves acknowledged that they looked nicer and fatter than any others they had seen. As all were now deeply interested in pork, the boys bristled up and entered into these matters with zeal; and their opinion being asked by the old man which pig, of all they had seen, they would prefer, they agreed upon the Chester Counties. So a young sow was purchased, which would drop a litter of the pure breed in about two months. For this purchase Uncle Benny advanced the sum of thirty dollars out of his own pocket, the money to be refunded to him by the sale of the pigs that were to come, the seller agreeing to deliver the sow at Mr. Spangler's farm the following week, so as to allow time for putting up a suitable pen.

This purchase made, they set out to inspect the hen-roosts and pigeon-houses. It was concluded not to buy any chickens just then, as Mrs. Spangler had quite a number already on the farm, and Uncle Benny thought there would be danger of disputes arising with her about eggs and other matters, and he did not choose to run the risk of ruffling her feathers. But he advanced four dollars to pay for six pairs of pigeons, which he was to receive back from the increase of the flock. He thought it better to lend the money to the boys than to make them a present of it, as it would rest on their minds as a sort of weight or obligation, teaching them the necessity of care and economy to clear it off. The pigeon-dealer put the birds into a roomy box with a covering of slats, and the party started for home.

The boys were at work early next morning, under Uncle Benny's direction, fitting up a pigeon house. There was a large loft over the wagon-shed, where they resolved it should be. It had a good, tight floor, to which they could ascend

through a trap by means of a step-ladder. The front was open, but this they soon made all right by nailing up laths sufficiently close to keep the pigeons in, yet so far apart that they could put out their heads and survey the premises, so as to become perfectly familiar with them before being allowed their liberty. Part of this lattice-work projected two or three feet beyond the front, thus affording to the birds a view, from two sides and the front, of all that was going on out of doors. They then provided nests by making rough boxes about fifteen inches square and four inches deep, which they pushed back under one of the eaves, giving the pigeons a chance at the seclusion which they invariably covet, when ready to lay and hatch out their young. These fixtures were made of odd stuff they found lying about. But the great help toward doing even this was found in the old man's tool-chest. They could have done very little without him and his tools.

When these hasty but sufficient preparations had been made, he required them to put into the loft a low earthen pan, of large size, filled with water, for the pigeons to bathe in, as well as to drink from; for pigeons are thirsty beings, and delight in water. No creatures enjoy drinking more heartily. They plunge the head in nearly up to the eyes, and take a full draught at once, not slowly and deliberately, like chickens. He also fitted up for them a feeding trough about two inches deep, which he covered with a wire net-work, so as to keep the pigeons from getting into it, but with the meshes large enough for them to put in their bills and take out the food. This would keep the latter free from dirt, as well as prevent waste. Then over one corner of the loft he caused to be spread at least a bushel of fine gravel, broken lime, and pounded bricks, to assist digestion and furnish material for the formation of egg-shells. Beside this there was a supply of common salt, an article which is indispensable to the health of pigeons.

The making of all these preparations was of course a great affair for the boys, but it was surprising how heartily they carried them through. The simple fact was, their sympathies had been enlisted in a cause exclusively their own. They therefore kept to their work as energetically as if sure to get rich by it. Indeed, while thus engaged, there were a great many conjectures indulged in as to when the pigeons would begin to lay, how many eggs would be hatched in the course of a year, and whether they should take the squabs to Trenton market and sell them, or whether it would not be better to let them grow up, and thus increase the flock to a large size, before they began to sell any. There was a general impatience among them to hurry up the laying, and have it begin immediate-

ly. If that important operation could have been performed by the boys themselves, there is no doubt but they would have cheerfully undertaken it. It is probable that, if it had been in their line to do the hatching, they would have undertaken that branch of the business also.

Everything being thus made ready to receive the pigeons, they were let loose in their new quarters, there to be reconciled to the strange scenes around them. The food that had been taken from the corn-crib was carefully measured, and entered in an account book that Uncle Benny had provided, so that all should know what was the cost of keeping pigeons, and that the boys should be taught account-keeping, as well as the importance of having a written record of their doings. Besides these advantages, it was necessary for the satisfaction of Mr. Spangler. He had thought pretty well of their keeping a pig, but he had a very poor opinion of the pigeons, notwithstanding the luminous disquisition of Uncle Benny as to their being an advantage on a farm. He said from the first that they would eat their heads off, and that he knew he should have to foot the bill. It was therefore highly desirable to know exactly the cost of feeding them, if it were only to satisfy him. As the responsibility of the whole enterprise rested on Uncle Benny, he was determined to see that no part was neglected.

The pigeons very soon became reconciled to their new lodgings, as pigeons always will be when they have roomy quarters, with plenty to eat and drink. The greater the number, the sooner they accept a new place as their home; and, as a general rule, the larger the flock the better it thrives, as pigeons are eminently social in their natures. A solitary pair, put into a new house, will be very likely to leave it and unite with a larger flock established elsewhere. To do this they will travel many miles. But as in this case the boys had procured about a dozen, there was sufficient companionship to make any home agreeable that was as well attended as this was. They were constantly seen in the projecting lattice-work in front of their quarters, enjoying the sun, stretching their wings, and looking all over the premises, as if wanting to make acquaintance with them.

Poetry.

REST.

For the Ontario Farmer.

There is rest for the bird when its wanderings are o'er,
And it finds a new home on a sunnier shore;
There is rest for the tree when the summer is sped,
And the leaves that adorned it lie scattered and dead;
There is rest for the steed when the journey is done,
When the daylight is past—and the goal has been won,
There is rest for the earth when the wintry winds blow,

And her bosom is white with the sheltering snow;
But where is the rest for the poor tolling brain,
As it strains for the end that it never may gain;
Or where the repose for the laboring heart,
O'er bounded with cares which it never depart,
Or the grief-stricken soul with its sorrows oppress,
Oh, where shall the world-weary spirit find rest.

Hark! hark to that voice! 'tis the Saviour who cries,
Look up and rejoice, from troubles arise,
In me there is peace, and in me there is rest,
Let the weary and sad come to me and be blest;
Dear Lord! we believe thee, we turn from our grief,
Our toil and our care to thy blessed relief,
Tho' weary the burden, tho' stormy the day,
There is light, there is calm at the end of the way,
Let thy yoke of submission be laid on the soul,
Thy meek loving spirit our persons control,
And the heaviest cloud that o'er shadows the way,
May be bright with the glow of a fast coming day,
Let us walk in thy light, let us rest in thy love,
Till we meet thee in peace in the mansions above.

MARIE.

OWEN SOUND, February, 1870.

DON'T LEAVE THE FARM.

Come, boys, I have something to tell you;
Come near, I would whisper it low!
You are thinking of leaving the homestead,
Don't be in a hurry to go!
The city has many attractions,
But think of the vices and sins;
When once in the vortex of fashion,
How soon the course downward begins.

You talk of the mines of Australia;
They are wealthy in gold, without doubt,
But, ah! there is gold in the farm, boys,
If only you'll shovel it out.
The mercantile life is a hazard,
The goods are first high and then low:
Better risk the old farm a while longer,
Don't be in a hurry to go!

The great showy town has inducements,
And so has the busiest mart;
But wealth is not made in a day, boys,
Don't be in a hurry to start!
The bankers and brokers are wealthy,
They take in their thousands or so!
Ah! think of the frauds and deceptions,
Don't be in a hurry to go!

The farm is the safest and surest;
The orchards are loaded to-day;
You're free as the air of the mountains,
And monarch of all you survey.
Better stay on the farm a while longer,
'Tough profits come in rather slow;
Remember, you've nothing to risk, boys,
Don't be in a hurry to go!

Music.

We regret to say that a plate of music we had expected to insert in our present issue has failed to reach us in time, so that we are obliged to omit this feature for once. It is not easy to provide a music page with regularity, owing to the fact that we are obliged to be dependent on the arrangements of others for it to some extent, or to send abroad for it direct, a font of music type being about as rare in Canada as a white crow. A compositor who can set music type is well nigh as rare as the type itself. We hope to find some way of overcoming this difficulty, so as to continue a feature of this journal which we are sure, a great many of its readers highly prize.