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"Agriculture not only gives Riches to a Nation, but the only Riches she can call her own.

New Series. TORONTO, OCTOBER, 1847. Vol. III. No. 10.

SECOND EXHIBITION,

Under the Patronage of the Provincial Agricultural Association of Upper Canada.

The inhabitants of Western Canada have now had an opportunity of judging whether a National Agricultural Association, based upon broad and patriotic principles, can be efficiently sustained in this Colony; and also whether it will be likely to be as productive of benefit in advancing the industrial interests of the country, as similar Institutions have been, in those countries where they have been long established. Probably a bolder movement, for the advancement of the cause of agricultural and general improvement, was never before made in a British Colony, and so far, the friends of the cause have abundant reason to be satisfied that the great mass of the people of Canada are friendly to the Association. This is precisely as it should be; for by an united effort in erecting and sustaining a National Agricultural and General Improvement Association, other Institutions of an important character, will be brought into existence, which, under proper management, will be productive of much good in fostering the industrial interests of the country. The anxiety that has pervaded the public mind, regarding the interests of the Association, and the willingness that all parties have evinced in uniting their means and efforts in building up an Institution for the encouragement of Agriculture, Manufactures and Arts, abundantly prove to our mind, that the period in the history of Canada has arrived, that all parties are willing to meet on neutral ground, in promoting the interests of any great cause in which the welfare of the country is concerned. This fact being now substantially proved, the friends of agricultural improvement should embrace the opportunity, and bring into requisition all the available means in their power, which would secure to the country the speedy establishment of an Agricultural College, an Experimental Farm, and an Agricultural and Mechanical Museum. If the Provincial Agricultural Association of Upper Canada were to employ the influence they now possess, the establishment of those Institutions might be in full operation before the lapse of two years. The late President of the Association, E. W. Thomson, Esq., very pointedly directed the attention of the people of Canada to the legitimate operations of the Association, and the influence that should be brought about by it upon the agriculture, manufactures and commerce of the country, in the Annual Address, which more forcibly

illustrates the nature of the movement which is being made for the benefit of this young and flourishing country, than we are able to do in these introductory remarks. We therefore shall at once proceed to make a few hasty sketches of such matters of interest as came under our observation while attending to our official duties at the show grounds, and leave Mr. Thomson to explain to the Canadian public the character and objects of the Association, in his able address, which will be published in the November number of the *Cultivator.*

Unfortunately, the weather was very unpropitious, which had the tendency of thoroughly disorganizing the arrangements that were made by the local committee previous to the Exhibition; and, consequently, those who came from a distance were disappointed, to find, that the heads of the departments were not at their posts, to give proper directions in the arrangement of the various articles entered for competition. Owing to the above and other causes, which we shall hereafter explain, the Show, on the whole, failed in meeting the expectations of some of the friends of the cause; while others were agreeably disappointed with the variety, excellence and abundance of the best specimens of the natural and artificial products of the country, that were brought forward for competition. Some idea may be formed of the extent of the exhibition, when we state that the number of entries made on the Secretary's books amounted to upwards of 1700 articles, most of which in point of merit would do credit to much older countries than Canada. The show of horned cattle, horses, sheep, and pigs, exceeded in point of variety and excellence our most sanguine expectations. The implement department was fully and liberally represented, and in fact excelled in point of merit and substantial construction any exhibition of the kind that we have witnessed, not excepting those of the New York State Agricultural Society, held at Utica and Auburn. The implements of husbandry exhibited, consisted of a variety of ploughs, of English, Scotch, American and Canadian patterns, amounting in all to about thirty specimens; thrashing machines and separators, corn grinders and shellers, reaping machines, fanning mills, straw cutters, cultivators, harrows, horse rakes, clover-gathering machines, brick machines, and a variety of other useful and labour-saving machines, all of which shall be brought more prominently before the notice of our readers as soon as a favourable opportunity presents itself.

We saw much to admire; indeed, out of the 1700 and upwards of articles that were entered for competition, with a very few exceptions, the whole mass were highly creditable to the enterprising competitors of both sexes, who, notwithstanding the unfavourable state of the weather, evinced a lively interest in the success of the exhibition. On the other hand, we saw much to deprecate; and, in fact, a similar piece of mismanagement would greatly tend to destroy the confidence that the people of Canada have in the Association. Much of the want of a proper and systematic arrangement grew out of the unfavourable state of the weather; but by far the greater proportion was the result of a wretched system of organization, and an almost total ignorance of the duties that were required of each individual who professed to take a share in the management of the exhibition. Much blame was heaped upon the Secretary of the Association, for not having previously brought about a more perfect system of organization and the good citizens of Hamilton, who had the management of the whole affair, were not slow in heaping censure upon the Secretary, for his *neglect* and total *ignorance* of his duties. The truth of the matter is, the local committee at Hamilton appointed their Chairman, their Treasurer, and their Secretary, by which act they clearly gave the Secretary of the Association to understand that they were determined to take the management of the whole affair in their own hands, which of course was acceded to them without a word of disapprobation on the part of any one. To make a long story a short one, the Secretary of the Association did not commence his official duties until 11 o'clock on Tuesday, and then it was with the greatest difficulty that he could procure any Clerks or Assistants, all of which were promised

him on his arrival at Hamilton. The same amount of mismanagement was never before equalled in so large and respectable an assemblage, and we are not prepared to attach blame to any party, inasmuch as but few of the managers were acquainted with the best systems of arrangement required to give a wholesome and popular effect to so large a collection of the choicest products of the country. As we propose to take a more extensive notice of the various articles that were on the show ground, under their different departments, in the future numbers of the *Cultivator*, we shall for the present draw these remarks to a close, by giving a brief outline of what we deem requisite to ensure the well-working of the future exhibitions, under the patronage of the Provincial Agricultural Association of Upper Canada.

It was palpably evident to all who attended the exhibition under notice, that the machinery by which it was governed was very badly constructed and arranged; and indeed the thorough want of arrangement and system that appeared to pervade every department, called forth, on the part of the friends of the Association, the loudest terms of disapprobation. To prevent the recurrence of a similar piece of mismanagement, the Association have appointed a special committee, consisting of the President, Vice Presidents, and Secretary, for the purpose of re-modelling the constitution, so that the laws or rules by which the Association will be governed in future will be clearly and fully expressed, and by which means much misunderstanding as to the real objects and intentions of the Association will be prevented. As a member of that important committee, we feel anxious to see a well-digested and comprehensive constitution adopted; and as there are doubtless many friends of the cause who could give useful hints or suggestions, from which the committee could compile a constitution for the future government of the Association, which would secure the confidence of all classes and ranks of society in o r noble province; we feel in hopes that those who consider themselves competent to render the above service, will avail themselves of the earliest opportunity of doing so. On former occasions, the subject under consideration has been very liberally discussed in the columns of the *Cultivator* and at the various agricultural meetings we have had the honour of attending, and what we have now to recommend to the notice of the committee will be found to differ in a trifling degree with the suggestions made by us on the former occasions alluded to. To set the ball in motion, so that the committee may be able to come to a decision and have their report in readiness, so as to be submitted to the Association at their February meeting, we shall embrace the present opportunity of submitting a few of the leading features of amendment we have to propose.

The Association, in our humble judgment, should be governed by the Presidents and Secretaries of the District and County Agricultural Societies of Canada West; and in the event of either of the above functionaries being prevented from attending the regular meetings of the Association, then an especial Director should be chosen for the occasion by the local society, to secure the full representation of each district at the meetings of the Provincial Board. The Presidents of District and County Societies should, by virtue of their office, be viewed in the light of Vice Presidents of the Provincial Association; and the Secretaries should also be viewed in the light of Assistant Secretaries. The Assistant Secretaries should be instructed to take all the entries for their respective districts, which should be forwarded to the Secretary of the Provincial Association at least two weeks previous to the exhibition, so that they might all be entered in the various class books some days before the exhibition. Instead of paying the premiums at the close of the exhibition, the money, books, diplomas and medals, drawn in each district, should be remitted to the District Secretaries; and the same should be duly advertised, so that the successful competitors would know when and to whom they should apply for their premiums. The Board of Directors, consisting, as previously mentioned, of the Presidents and Secretaries of District and County Agricultural Societies, should, during the exhibition, take up their quarters at one of the principal hotels, so that an appeal at all times could be made to them for a decision, upon the various matters of interest that would require to be brought under their notice. This duty would more particularly devolve upon the President and Vice Presidents of the Association, as the Secretaries should be appointed to take the superintendance of the arrangement of the several departments of the exhibition, so that each article would have its proper place, and the Judges thoroughly drilled in such matters connected with their duties, with which they are not to be supposed to be so well acquainted as would be the Se etaries of the Association.

ON MANURES.

Of the various operations on a well organized farm, there are none so difficult to be properly understood as that of knowing how manure should be applied to the soil, with the greatest advantage to the crops. Notwithstanding much has been said and written upon the subject, still, until very recently, the aid of *science* was not to any extent brought into requisition, by which the farmer could judge correctly as to the certain effects that different kinds of manure would have upon the various kinds of vegetables and crops grown for the use of man. By the application of chemistry to agriculture, the farmer may judge pretty correctly as to any deficiency there may be in his soil, for the particular crops that he may wish to grow; and by the aid of this science he can also judge correctly as to the proper quality and character of the manure that should be applied to the soil, to make up any deficiency in its natural quality. By this means, the enlightened husbandman may calculate with a considerable certainty as to the average products he will be able to obtain from his land, as a reward for his toil and investment. Although agriculture is the most ancient among the professions, and is held in favour by all classes, still it is singularly true that it is among the most *modern sciences;* and until very recently has it been thought practicable to so manage agricultural practice that any thing like certainty could be looked forward to, as the result of an operation. A Davy, Low, Johnston, and a Leibig, have so completely illustrated the principles that govern an improved scientific practice, that those desirous of obtaining an acquaintance with the natural and unerring laws that govern the vegetable kingdom, may do so with a very trifling effort and expense. The more thought we have given this very important subject, the more interesting has it become; and we are quite satisfied that the system of education taught in our schools, in the rural districts, should have a direct reference to the great principles that govern vegetation, as well as those practical sciences, that would in an eminent degree fit our young men to become enlightened and highly useful and eminent citizens.

The following extracts, from the pen of Mr. Spooner, very pointedly illustrate the importance of the farmer paying strict attention in adapting his manure to the soil and the particular crop he cultivates:

A Treatise on Manures; their Comparative and Economical Qualities, &c. By W. C. Spooner, author of an "Essay on Superphosphate of Lime, &c."

We cordially recommend this pamphlet to our readers, as a simple statement on the theory and practice of manuring, by an experienced man. The following quotations illustrate the character of the work:—"The *art of manuring* consists in supplying those elements to plants which they cannot obtain in sufficient abundance from the atmosphere or the soil. To furnish in the manure all the food that a plant requires, would be a very wasteful and unprofitable practice; and to supply on the other hand, only those elements which cannot possibly be procured elsewhere, would be a mistaken and ruinous economy. The true and proper medium is to supply in *abundance* those constituents which cannot be otherwise obtained, and with *moderation* those elements which may be furnished by other sources. Thus the first object should be, to furnish the inorganic elements; the second requisite, to assist in supplying those materials which the atmosphere and the soil likewise furnish; and the third to avoid as much as possible adding those constituents, by means of the manure, with which the land already abounds." The following is a useful passage on the managment of farm manure:—"Whatever new manures may be introduced, they will never have the effect of displacing this old fashioned though necessary agent. In connection, however, with its sterling quality, that of affording every ingredient required by plants, it usually possesses two grand faults; viz, its bulk and its poverty, or rather its poverty in proportion to its bulk. The quantity requisite for properly manuring an acre is so great, that its cartage approximates its value to its original cost. It possesses, in fact, too little of the more valuable combinations of the phosphates and of ammonia, or rather too large a proportion of carbonaceous and siliceous compounds, and particulary of water. It is quite necessary for the whole of the straw to be returned to the land; but it should be the vehicle of more valuable articles than is usually possessed. How, then, is this evil to be remedied? It may be obviated in two ways: one by rendering the manure itself of more intrinsic value; and the other, by adding to it or to the land, then or at another period, those

articles in which it is weak, or comparatively deficient.

The employment of oil cake or Linseed jelly, it is well known, is one of the more powerful means of enriching dung; so much so, that 12 loads made by oilcake fed beasts are equal to 24 of farm-yard dung. This is owing to the fact of Linseed possessing, in addition to a large proportion of oil and albumen, a considerable per centage of phosphate of lime; and which, not being required by the fattening beasts, is almost entirely excreted with the dung, and in a form that can readily be assimilated by plants. The striking benefit which Linseed feeding imparts to manure, points out very forcibly the faults which we have ascribed to ordinary dung; and thus, whether we enrich it by Linseed feeding, or add to it, when applied, manures in a more concentrated state, we accomplish the same end, though by practices apparently widely different." "Many methods have been advised for the treatment of dung, so as to economise and retain its volatile elements; amongst others, it has been recommended to sprinkle weak sulphuric acid over the heap, and also sulphate of iron. Now, if we consider the high cost of this acid, viz, 10*l.* per ton, or upwards, it is extremely doubtful whether the benefit will repay the great expense of the cost. A few years since, some extensive experiments were instituted by Professor Henslow, in order to test the advantages of employing gypsum for this purpose. The result of these trials I will not say was altogether successful, but at any rate they fell short of the anticipated effect. The plan adopted was to scatter a given quantity of gypsum in the state of fine powder on successive layers of the manure heap, and it was expected that the sulphuric acid, which forms upwards of one half the gypsum, would leave the lime and unite with the ammonia, for which it had a stronger affinity, and fix it in the more durable form of a sulphate. An essential quality, however, was overlooked, viz, that it was necessary that the sulphate of lime should be in a state of solution, and that it required 500 times its weight of water to dissolve it, which quantity it could never meet with in the dung heap, and, consequently, very little was dissolved. Now, it should be borne in mind that sulphate of lime, at 2*l.* per ton, is five times as cheap as oil of vitriol, consequently its sulphuric acid must be at least 2½ times as cheap, allowing nothing for the value of the lime. Its use must, however, be far more economical; and what can be easier than to supply a sufficient quantity of water to dissolve the gypsum, and to shower the solution from time to time over the dung heap. Or I would suggest, as being more economical, to have a tank, or a simple excavation in the centre of the farm-yard capable of receiving the washings from the manure, and to keep this pond always saturated with gypsum, and by means of a wooden pump to raise and sprinkle the solution over the dung-heap."

In reference to this last suggestion we must say that the quantity of rain-water falling on our dung-heaps, though not enough to dissolve the gypsum placed in them, is sufficient to dissolve out their more soluble ingredients, which are thus apt to run into the neighboring brook. And the larger quantity, which Mr. Spooner would apply artificially, would necessarly possess this injurious property in a greater degree. We are inclined to recommend the sulphate of iron as the cheapest mode of fixing the ammonia in dung-heaps; 10 to 20 lbs. of it to every ton would furnish acid enough for all the ammonia likely to be present. —*Lon. Ag. Guz.*

Keeping Farm Accounts.—Let any farmer try the experiment, and he will find it as interesting as it is useful, to know from year to year the actual produce of his farm. Let everything, therefore, which can be measured and weighed; and let that which cannot be brought to an exact standard, be estimated as if he himself were about to sell or purchase it. Let him likewise, as near as possible, measure the ground which he plants, the quantity of seed which he uses, and the manner in which he applies. The labor of doing this is nothing compared with the satisfaction of having done it, and the benefits which must arise from it. Conjecture, in these cases, is perfectly wild and uncertain, varying often with different individuals, almost a hundred per cent. Exactness enables a man to form conclusions, which may, most essentially, and in innumerable ways, avail to his advantage. It is that alone which can give any value to his experience. It is that which will make his experience the sure basis of improvement; it will put it in his power to give safe counsel to his friends, and it is the only ground on which he can accurately place confidence himself.—*Norristown Herald.*

Agricultural Education.

An Agricultural School has been established at Kimbolton, in Bedfordshire, under the patronage of His Grace the Duke of Manchester. We select the following passages from the speeches that were delivered on the occasion of the opening. Professor Johnston, after remarking on the general claims of the Institution, as a Seminary of useful learning, observed, "There is a farm attached to the school, and it will be put under such management, that the pupils will get that practical knowledge without which the best theories are as nothing Then as to the charge for the education of the pupils, the commit ee have wisely fixed it at £25 a year; this is a sum so low, that any one who can scrape the money together, will find it a most admirable investment. To you, farmers, I now more particularly address myself. You had better, by far, give your sons a good education than a large fortune: they may lose what you put into their pockets, but once lodge a good stock of knowledge in their heads and they will not lose that. * * * By this school you will elevate the character f the neighbourhood and of the agricultural class in particular, and enable your sons to remain in the same locality where you have lived so long, which is by no means a small recommendation to a farmer. There is always a great desire among farmers that their children should succeed them on the same lands; but a great change is coming over the country, and many names once flourishing in certain districts have now become extinct. The cause of this is that there is a great progress of improvement; and if the people do not progress with it, they will be swept away to make room for others more skilful and more enterprising. If you go to the manufacturing districts, you will find that the people there are under the impression that the farmers of England do not cultivate the land properly, and make the most of it for the production of food for the people; that they do not possess the requisite knowledge, and they are actually educating their own sons as farmers. How necessary is it then that you should place your children in a proper position to stand up against difficulties, and I know of no plan whereby this can be accomplished so effectually and so economically as by educating them well, and placing them in these schools." Mr. Blacker, of Armagh, observed—"To every one that calmly considers the question, I think it must be evident that a competition with those who have cheaper land, cheaper labour, a better climate and lighter taxation, can only be supported by the British farmer by calling to his aid a superior system of cultivation and an increased produce, to afford compensation for a diminished price. It is evident that sixty bushels at 40s. the quarter, will be equal to forty bushels at 60s. Such an increase, therefore, is the object that must be kept in view; and the great question to be considered is, how this additional produce can be obtained. Every one knows how hard it is to change habits which have been handed down from father to son for generations, and how difficult it is to make men advanced in life change the systems they have acted on from childhood; but it is quite clear a change of system must take place before the increased production I have alluded to can be obtained. And it is therefore in this point of view that the establishment of agricultural schools at present becomes so important, as being the means of training up the young men in a superior mode of husbandry, before they have acquired prejudices to be overcome; and whilst training up the young, the increased produce of the model farm will afford a lesson that must have its effect upon the old, and thus by degrees bring about the desired change. * * * When protection ceases finally, there can be no difference between the prices in Hamburgh, Holstein and Dantzig, and Mark Lane, except the cost of transport,—no more than there is between Leith and London. All that the British farmer has to rely on is the superior capital and skill he can call to his aid; and in order not to lose the former, he must take care to cultivate the latter; and this he cannot do to its full extent without availing himself of those lights which modern science now cast upon agriculture. I therefore hail with pleasure the formation of this establishment, as the means of bringing a scientific education within the reach of the farmers of this neighbourhood; and I do hope they will have the good sense to give their children the full benefit of it."

Agricultural Societies in Great Britain and Ireland.

As many of our readers have come directly from the "old country," and adopted Canada as the land of their future home, they will no doubt feel interested in being informed of the state and

progress of agriculture in Great Britain and Ireland. We propose therefore devoting a small portion of our pages, in each number, to this object. We shall of course avoid all minute details, except in such cases as may appear to possess a practical utility in this country. A knowledge of what is going on in the agriculture of the parent country, cannot, we should think, but prove highly interesting and useful to the farmers and inhabitants generally of British America. We are indebted to the *Gardener's Chronicle and Agricultural Gazette*, published in London, a journal conducted with very great talent, for the facts which follow:—

The great meeting of the *Irish Agricultural Improvement Society* took place in Londonderry, July 16th, and upon the whole appears to have been very successful. The cattle show was superior to any former years, and the implement yard contained a large number of specimens of agricultural machinery, implements, &c., of the best finish and construction, many of them manufactured in Ireland. At the public breakfast, much interesting discussion took place on topics of a highly important and instructive character The Earl of Erne spoke in reference to the importance and economy of draining with pipe tiles. Draining formerly cost him £9 15s. per acre; with pipes, it could now be executed for £4 15s. John Hamilton, Esq, made some excellent remarks on the present agricultural condition of Ireland. Farms, he thought, from 1000 acres to very small ones would be highly beneficial to the country, and recommended landlords to re-model their estates, and manage them similar to those of England and Scotland. He spoke in favor of spade husbandry, of which he had experience. An acre of ground, cultivated by the spade, was planted with vegetables in April; the produce fetched £16. Turnips succeeded, and promised an abundant crop. Many interesting statements were made in reference to the success and profit attending the reclaiming of bogs, which abound in many parts of Ireland. Reclaiming a portion of a peat bog was commenced last December, and sown with oats in the spring, at an outlay of £14 per acre; the crop, in July, was estimated at £23 per acre. Mr. Hamilton remarked that "he had seen, the other day, a person put one hand and arm, to the arm pit, in heather (heath) and the other equally deep in corn, on the same land, which were both in the same condition four months ago!" Lord Erne gave his testimony, that without going at all to bogs, they might improve much of the land now so wretchedly cultivated so as to increase the present amount of produce three or four fold. One interesting feature of this valuable society is the professorship of chemistry that is attached to it. This is after the example of the two great national societies of England and Scotland. Dr. Hodges, the chemist of the society, delivered, before the members, a long and highly instructive lecture on several of the principal topics connected with the theory of agriculture. With exertions such as these, and the cultivation of a better social spirit among all classes of society, we hope a brighter and happier day is about to dawn on unfortunate Ireland.

Harvest Prospects.

The *Agricultural Gazette* of August 28th, contains a tabular report of the grain crops in each of the counties of England and Scotland, evidently compiled with much industry and care. From an examination of this report, we conclude that the produce of wheat will be upon the whole considerably above an average, and the quality good; although in a few localities the yield seems scarcely an average, the straw mildewed, and the quality indifferent. Barley appears almost universally an unusually heavy crop. Oats moderate. Beans and Peas generally inferior, in some instances a failure. We learn from private letters, that in the counties of Kent and Sussex the yield of wheat will be very heavy, averaging in some districts from five to six quarters per acre. Hops promised a full crop generally; except Farnham and Worcester, where the plantations are much blighted. We likewise learn, from a tabular report in the *Gardeners' Chronicle*, that the potatoe crop in England and Scotland was generally healthy; although disease had shown itself in several districts, but in a modified degree. We infer, however, that it was becoming more apparent as the season advanced. Still there is reason to hope for a good crop; but the quantity cultivated is small. The Yorkshire Agricultural Society, which ranks next in importance to the English National Society itself, had celebrated its anniversary under favorable auspices. Both stock and implements were of the highest order and more than usually numerous. There was a highly interesting discussion on the growth and management of flax; a subject upon which Professor Johnston delivered a very instructive lecture, to which we may, perhaps, refer in our next number.

Chemical Principles of the Rotation of Crops.

BY D. P. GARDNER, M. D.

1. *The Object and Necessity of Rotation.*—That no doubt may arise of the object to be gained by systems of rotation, I will advance a definition which may guide us in the following discussion. The object of a rotation is the production of the greatest profit in crops with the least exhaustion of the soil. The views entertained by practical men on the subject are however by no means fixed; in many parts of the country it is imagined that the only condition of the rotation is that the same plant be not cultivated annually, and that a succession of corn, Wheat, and Oats, is as much a system of rotation as any other plan—it is indeed a rotation, but not a system.

How far there is any practical necessity for rotations is also a point in much doubt. We are often assured by good farmers that given crops, as corn, Wheat, Hemp, have been grown in certain districts from time immemorial. There are exceptions to a general rule and of no force whatever; they prove that there are spots on the earth's surface of extraordinary fertility, or, what is more frequently the case, that in such districts there is some cause of repairation, by freshets, irrigation, or the washings of adjacent hill-sids. Wherever the fertility of new lands, which results from the growth of forests or accumulation of uncut Grasses for centuries, is exhausted, and the soil reduced to a state similar to the subsoil, it is necessary to adopt some means to increase its yield, either by manures or a system of rotation. That this condition is ultimately reached in uplands, will be readily granted; the only point worthy of further consideration is, how far a rotation will economize manure already in the soil in new lands, or manure added artificially. This is the immediate subject of the memoir.

Experience and analogy have led men to adopt rotations wherever agriculture has been practised for a length of time. Experience has fully demonstrated that no plant will continue to be luxuriant under ordinary circumstances for an indefinite period. To this rule trees are only an apparent exception, for they submit in time to new species when left in a natural state; they live indeed for centuries, by the great development of their roots and penetrate year after year into new strata of soil; but it is well known that in northern forests the Birch and Maple follow the Pine, and in more temperate regions the Pine succeeds the Oak and allied genera.

Analogy is remotely a guide to the rotations in the case of forests, but if we observe the phenomena of vegetation on new lands it becomes extremely instructive. The planter of the south-west makes haste to cultivate cotton on his new lands, because, for a few seasons he is not overwhelmed with Grasses, but is called upon to combat annual weeds easily overshadowed by his crop. If a portion of new land be left waste we discover that a succession of plants invades its surface and not certain species, we find that however convenient the seeds may be, the plants of the first year give place in time to new genera. To this point I have paid particular attention in Virginia, and find that however the species may vary in different soils, there is a sequence of natural families sufficiently apparent. Where the land is remarkably rich, the plants first developed are species of the families Chenopodiaceæ, Polygonaceæ—these give place to Malvaceæ, Compositæ, and Umbelliferæ; and finally species of Leguminosæ, Rosaceæ and Gramineæ succeed. It is not asserted that other families are absent, but these are so fully developed as to be characteristic of the vegetation. This natural succession differs with the latitude, soil, and degree of moisture; but whatever may be the families, it is sufficiently apparent that the plants of new soils, or rich weeds as they are called, give place sooner or later to those of the barrens. Nor is this the only evidence of a natural rotation. After a season, when the roots of Grasses have produced a mat of vegetable fibres, is it not well known that the meadow becomes infested with wild Onions, Buttercups, (Ranunculs), Thistles and other weeds, which, if not exterminated, soon overwhelm the Grasses? Hence the prudent husbandman adds ashes or lime, and scarifies his meadows; for by these means the roots are rapidly decomposed, and the soil brought back to a state of composition favourable to the development of Grasses; or if he be conducting a rotation, he ploughs the meadow, and thus acquires by art a natural coat of manure, of great service to such cultivated crops as, like the Chenopodiaceæ, require a soil rich in organic matters.

2. *Explanation of the foregoing Natural Rotation.*—The difficulty of making certain plants grow after each other in the same soil, was said to arise from the mutual repulsion of plants, and

explained by Von Humboldt, Plenk, and De Candolle, by reference to the experiments of Brugman and Macarie. These naturalists discovered that the root of a plant growing in water, throws out a dark mucilaginous fluid which they called its excrement. Thus excrementious deposit of any plant is supposed to be inimical to the growth of its species, and also to some others; but may on the other hand be of service to an entirely different family. De Candolle saw in these reputed facts the explanation of rotations, which he therefore resolved into the art of discovering such a succession of crops, that each might flourish on the organic remains of its predecessors: Clean fallows were also commended as a means of hastening the decomosition of excrementitious matters.

But it is neither satisfactory shown that excrementitious matters accumulate in the soil nor that they are inimical to the growth of the species. Macarie, Braconnot, and others have failed to obtain positive evidence of such dejections, when a soil was employed instead of water, and Alfred Gyde states that plants are benefited by watering with a solution of their excrementitious matters. Some, as Boussingault, go so far as to regard the dark mucilaginous matters said to be exuded by roots in water as the effect of a diseased action, denying the exertion; but this cannot be maintained, for amphibious plants as Mints, Cress, Myosotis palustris, and other species, which are not placed in an abnormal situation when growing in water, yield this substance. The experiments of Gyde appear also explicit on this point. If we are to receive the theory of Dutrochet, that the penetration of the soil fluid through the roots is a phenomenon of endosmosis, there is a necessity of admitting the passage outwards of a portion of the elaborated sap, which Gyde states to be identical in composition with the excrementitious matters collected by himself That none should be obtained from sand, or soil, under certain circumstances, is not surprising, from the exposure of the exuded matter, over a large surface and in contact with oxygen absorbed from the air, would rapidly change it into a new body capable of escaping the ordinary tests—in the same way that alcohol by mere exposure over an extended surface is rapidly converted into acetic acid by oxydation. Although it is premature to deny that a portion of elaborated sap does escape from the roots of some plants, it is very evident that this does not create a deposit injurious to the future growth of the species, and it is not the principle on which rotations are to be devised.

The natural succession of plants is connected with the presence of organic matter in the soil; the richest weeds which first occupy the surface having the greatest necessity for it, and thus through successive groups to the Grasses and forrest trees which grow well without any portion in the soil. Other elements of fertility being present, the Chenopodiaceous and allied families thrive only in such localities as yield azotised matters, since they cannot grow without a supply from the soil. This surmise is sanctioned by the obvious presence of organic matters in the soils where they grow, and by the fact that some species exhale ammoniacal gases, but it is fully established by the experiments of Boussingault. This chemist grew Clover, Peas, Wheat, and Oats in a soil competely destitute of organic matter, and supplied them with distilled water only; the Clover and Peas were found to double their azotised matter during growth whilst the Oats and Wheat gained none whatever. As there was but one source of azote present, the atmosphere, it is apparent that the former have the capacity of supplying themselves therefrom, whilst the grain plants are altogether dependent on the soil. Hence in a soil charged with organic matters, rich in azote, those plants which require a supply by their roots will grow freely, and so far exhausts it in time as to render it unfit for the species, which is succeeded by an intermediate class, and finally by the Graminæ, Leguminosæ, and others capable of subsisting on aerial azote, and so far from exhausting, adding it to the soil. From this function of plants, we see an explanation of the natural rotation, and what is of more moment, a means of adapting our succession of crops to the accumulation as well as removal of azotised matters.—*Transactions of the American Agricultural Association.*

Black and White Paints.—Tools, wagons, &c. painted black, absorb the sun's rays, become hot, and warp and crack. Painted white, they reflect, and do not absorb the rays consquentely do not become hot, and they remain uninjured by warping. Hence all wooden articles, should be painted of some light color.—*N. Y. Farmer and Mechanic.*

EDUCATIONAL AND SCIENTIFIC DEPARTMENT.

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We propose giving, under this head, a series of papers bearing on the great interests of popular education; more particularly with reference to the wants of our agricultural youth and the rural population generally. We shall endeavour to write in a style adapted to the comprehension of all classes of our numerous readers; and shall feel anxious to make such articles as we may select from other sources, conducive to the intellectual improvement and social well being of those who are in the habit of giving our periodical a perusal. Every effort, however humble, that is in all sincerity put forth for this end, must, we should imagine, receive the approval of all who are well wishers to their country and their race.

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The application of Science to Agriculture.

No. I.

In the present paper, we shall confine ourselves to some merely *introductory* observations on the relation which several of the physical sciences have to the art of cultivating the soil. On the importance of that art, it would perhaps be superfluous to say a word. Suffice it to observe, that as the cultivation of the soil and the rearing of live stock are the source from which alone the materials, both of food and clothing, for myriads of human beings are derived; that in the prosecution of these objects, the greatest part of the inhabitants and fixed capital of the world are employed; that upon the permanent success of such operations the stability and prosperity of nations depend; these and other considerations show how impossible it is to over-estimate the claims of a national agriculture. That science has important bearings on this most important art, is what every enlightened agriculturist acknowledges and acts upon in the present day. Indeed, we might ask what pursuit of life is there to which science does not afford valuable assistance? Without her aid, it would have been impossible to have advanced the arts of life to any thing approaching the state in which they now exist; and consequently we owe to scientific investigations and discoveries the principal comforts and refinements of civilized life.

It must, however, be acknowledged that agriculture has been pursued more in a practical and empirical manner, than as a science reduced to principles; and this in great measure continues to be the case in all countries of the world at the present day. Indeed this has been the condition of every other art as well as agriculture; the practice, up to a certain stage of progress, has invariably been in advance of the science. Besides, the cultivation of the soil, the raising of crops and the rearing of animals, constitute an art, the true *rationale* of which requires the aid not merely of one science but of many, some of which are comparatively of recent origin. Chemistry, for instance, has not been able, till within the last half century, to throw much light on the composition and analysis of organic structures and the phenomena of vegetation. It has done far more for the farmer within the last dozen years, than it previously accomplished since the days of Alchemy.

We would be among the last to undervalue the results at which experience and practice have arrived in the tilling of the soil. It requires much time to collect a sufficient number of well ascertained facts before any theory can be formed, or science can deduce correct general laws. In this respect agriculture, like the rest of the experimental sciences, is peculiarly indebted to observation and experiment. The time, however, if not actually arrived, is now fast approaching, when science, aided by practice, should present to the farmer such a theory of agriculture as would explain the principal phenomena, and lead on to futur discoveries and improvement in this most interesting and important art. In the present day, there can be no excuse for the generality of our farmers obstinately adhering to the old and often injurious practices of their forefathers, and disregarding all new suggestions for an improved system of husbandry, as dangerous innovations upon old established customs. It is now high time that the antiquated prejudices, which are still too characteristic of the farming classes, both in England as well as in her Colonies, should be thrown aside; and that the aids of science should be welcomed, to help forward an improved and advancing agriculture. This subject is now receiving the closest attention of many of the most gifted minds, both in Europe and America. Investigations and experiments have been instituted, that have already led to most valuable results. Our object, in this series of papers, is mainly to help forward this great work in Canada; or, in other words, to assist in establishing an agricultural system in this colony, upon the secure and only permanent basis of scientific principles.

In order to form a just conception of the important relations of science to agriculture, we have only to ask the question, what are the agents and materials that enter into the art and daily business of the farmer? There is in the first place the *soil* he cultivates. Whence is it derived? What is the order of inclination and position of the underlying strata? How have such apparently endless varieties of soils been formed; and what are the best means of their permanent improvement? Now these are questions that cannot be answered with any degree of satisfaction, without appealing for aid to the Geologist.

Geology is a science which treats of the formation of the crust of the earth; explains the causes which have operated, through an inconceivable period of time, in producing the many and great changes that have taken place on the surface of our planet, such as the alternate changes of sea and land, the consolidation and stratification of rocks, varieties of soils, &c. It needs but little reflection to show that this science is capable of assisting the farmer, as well as the miner and civil engineer; the latter, in fact, can make no certain progress without it. The earth was originally without any permeable soil; the surface consisted of various kinds of rocks more or less indurated, bare and unproductive. This would probably be the case with the whole of what is at present dry land, after it had been raised above the level of the sea, or rather after it had ceased to be sea. By the united agency of air and moisture, together with the powerful influence of alternate heat and cold, these hard rocks became disintegrated, and crumbled down, forming a thin loose soil, gradually deepening as these causes continued in action. Small light seeds, wafting in the air, would speedily find a bed in this yet imperfect soil, where they would germinate, and sustain a scanty vegetation. These plants would droop and die; their substance undergoing decomposition, would unite with and enrich the new formed soil, thus enabling it to sustain plants of a larger kind, whose roots would penetrate still deeper into the crevices of the rock, and thus expose a larger amount of yet inert and unproductive materials to the agents of fertility! Insects and animals would next appear, to feed upon these plants; and after having lived their day, they also would yield up the materials of which they were built to the newly formed soil. Thus by degrees has the surface of the earth been formed—its various soils arranged; not by blind chance, but under the guidance of unerring law; inviting the curiosity and industry of man. The geologist proceeds even further than this; he classifies the various rocks, arranges them into distinct groups called formations, and these are found in regular order, in regard to relative position, all over the world. These rocks possess very different properties and composition, and hence the soils formed from them are of various qualities. These differences again give rise to different systems of farm practice, which is a thing that must be modified to suit not only varieties of soil, but likewise of climate, situation, and other varying conditions. We find some of the best soils for general cultivation formed from the traps and basalts; while the magnesia and mountain limestones afford but a thin soil, among the lowest in the scale of fertility. The slate rocks, such as abound in Wales, present an adhesive stubborn clay, difficult to work, but productive under good management. On the contrary, soils formed from shales and sandstone are easily cultivated, but require strict attention to rotation in cropping, and a liberal supply of manure to make them produce abundantly. Several of the modern improvements, such as draining, subsoiling, &c., are processes, the efficient performance of which would be materially assisted by a knowledge of geology. These few observations must suffice for the present, in our attempt to show the connection which there is between this very interesting science and the practice of agriculture.

The cultivation of the soil has immediate reference to the production of the largest amount of the best corn crops and vegetables. There is an intimate and indissoluble connection between the dead earth and the living plant; and it is an important and instructive part of the business of an enlightened farmer, to investigate the nature, extent, and effects of this connection. We intend, hereafter, to go somewhat fully into this matter and to shew the connection which obtains between the facts and doctrines of vegetable physiology and the practical art of the farmer.

Best Remedy for Burns.—Pound and sift *wood soot*, and mix it with sweet lard, and apply it, spread on linen rags. It will ease a burn quicker than anything. If the skin is off, the great thing is to keep it covered closee from the air. If the burns are large and bad, give salts or or cream tartar as a cathartic.

Black Leg Among Calves.

The *Black Leg*, or *Quarter Ail*, as it is called in this country, is simply inflammatory fever, frequently of a very severe and rapid character, brought on by high stimulating feed. Sometimes it runs its course and the animal dies in twelve hours from the attack; at other times life may not be terminated under 48 hours or more. The animal will commonly give no indication of ill health until violently attacked, when he will be found with his flank heaving, his breath labored and hot, eyes protruding, muzzle dry, pulse quick and hard, and in short, exhibiting every symptom of the highest fever. This is the first stage of the disease. Afterwards the whole system is congested. Its next type is a putrid one, attended with intense fever. The animal breaks out in ulcers, which slough away in large masses.

The disease is sometimes epidemic, and occurs mostly among young cattle—always among those which are highest fed. It receives its name from the fact that the animal affected with it exhibits a remarkable lameness in one or the other of its quarters at some stages of the disease. There is also a soreness of the loins and a peculiar crackling noise of the swelled parts when pressed upon with the finger.

The time for cure is during the first stages of the disease. It must be a valuable animal that would pay for treatment during the latter ones in a violent case.

Youatt, recommends as the first resort, copious bleeding, to be continued as long as the animal will bear it, or until he staggers and threatens to fall—the bleeding to be followed by doses of Epsom salts, to be given a pound and a half at a time, and repeated in six hours, if evacuation is not secured.

If the bleeding is not resorted to until the crackling under the skin is perceived, it can seldom be practised, as another stage of the disease has supervened.

A few extracts from Youatt will throw light on the subject:

"The bowels having been opened, recourse should be had once more to the pulse. If it indicates any degree of fever, as it sometimes will, (or the apparent debility is not always the consequence of exhaustion, but of vascular congestion,) the physic must be continued, but the constitution would perhaps be too weak for the direct sedative medicine. On the other hand, however, no tonic medicine must be given: the fire must not be kindled afresh after it has been partially subdued. If, however, the pulse is weak, wavering, irregular, giving sufficient intimation that the fever has passed, and debility succeeded, recourse may be had to tonic medicines. The tonics, however, which in such cases would be, beneficial in cattle are very few. The exhibition of the mineral tonics has rarely been attended by any satisfactory result—the barks have not always appeared to agree, but in gentian, calombo, and ginger, the practitioner on the diseases of cattle will find almost every thing that he can wish. The two first are excellent stomachics, as well as tonics; the last is a tonic, simply because it is the very best stomachic in the cattle pharmacopœia. They may be given three times every day in doses of a drachm each of the two first, and half a drachm of the last. They will be more effectual in these moderate doses than in the overwhelming quantities in which some administer them, and in which they oppress and cause nausea, rather than stimulate and give appetite. They should always be given in gruel, with half a pint, or even a pint of sound ale.

The breeder has much in his power in the way of prevention. His cattle should be carefully examined every day. Any little heaving at the flanks, or inflammation of the eyes, or heat-bumps on the back, or rubbing, will be regarded with suspicion, and met by a single purgative, or the abstraction of a little blood; but the decided appearance of inflammatory fever in one of them will not be misunderstood for a moment; it will convince him that he has been making more haste than good speed; and in the disease of one, he will see the danger of all. All who have been subject to the same predisposing causes of disease, should be bled and physicked, and turned into a field of short and inferior keep.

John Lawrence, whose work on cattle has often been mentioned with respect, expresses himself in his own somewhat peculiar way, but very much to the purpose, on this point. 'Prevention of this malady is the only cure worth notice, because, after the attack, the very nature of the case renders all remedy uncertain, or of very little profit, even if successful, on account of the expense of time and money. A piece of short or inferior keep should be reserved as a *digesting place*, in which the cattle may be occasionally turned to empty and exercise themselves. Those

observed to advance very fast may be bled monthly for several months; of the efficacy of which practice I have, however, by no means so good an opinion as of that of giving medicines which prevent internal obstruction. I am aware of the difficulty of such measures with a number of cattle in the field, and I am convinced that occasional purges, of alternative medicines, would prevent those diseases which seem to take their rise in over-repletion and accumulation.'

In the North Riding of Yorkshire, the first symptoms are those of *quarter ail.* The cattle are seized first in one quarter, and then in the other. The skin puffs up, and the crackling noise is heard almost from the beginning. The disease is usually fatal when it assumes this form.

In the West Riding, where from the rapidity with which it runs its course, it is called the *speed*, it also generally runs behind Inflammation, or rather mortification seizes one hock. It runs up the quarter, which becomes actually putrid in the course of an hour or two, while the other limbs continue sound. Few, and especially young beasts, survive an attack of this kind. Here the active use of local applications is indicated: and yet they will rarely be of much service.

In some parts of Surrey, under the name of the *puck*, the fore quarter or the side is the part mostly affected; and the animal frequently dies in an hour or two. On skinning the beast, the whole quarter appears black from the extravasation of blood, and is softened and decomposed as though it were one universal bruise.

Mr. Turner, of Reigate, puts this in a very clear point of view. He says, "name, (quarter-evil) is indicative only of a variety of it; or, rather, is one of the diseases that connects itself with it; and this disease is generally as completely limited to the quarter attacked as a fit of hemiphlegia is to one side of the human being. The animal is generally in the highest possible state of fever; but the quarter-evil is limited to the quarter, which feels, as it is popularly expressed, precisely like a jelly. There is no remedy, but there are many preventives, in which great confidence is placed, and which agree only in being composed of the most powerful stimulants.'"—*Prairie Farmer.*

Order on Farms.—One of the editors of the *Cultivator*, in his recent peregrinations, visited the farm of John Delafield, consisting of 250 acres, in the neighborhood of Seneca Lake. He was highly gratified with the system, order and neatness observable in every department. We make the following extract from his notes.—Ed.

Every person employed on the farm is furnished with a printed card, comprising the rules and regulations.

It is expected that all persons employed on the Oaklands Farm, *will carefully attend to the following system:*

Regularity in hours.

Punctuality in cleaning and putting away implements.

Humanity to all animals.

Neatness and cleanliness in personal appearances.

Decency in deportment and conversation.

Implicit obedience to the proprietor and foreman.

Ambition to learn and excel in farming.

Maxims of order and neatness.

1. Perform every operation in proper season.
2. Perform every operation in the best manner.
3. Complete every part of an operation as you proceed.
4. Finish one job before you begin another.
5. Leave your work and tools in an orderly manner.
6. Clean every tool when you leave off work.
7. Return every tool and implement to its place at night.—*Alb. Cult.*

Water-proof Glue.—An experiment has recently been made by a citizen of Albany, which has resulted in the discovery that a perfectly water-proof and exceedingly adhesive glue may be obtained by immersing common glue in cold water until it becomes perfectly soft, but yet retaining its original form; after which, it is to be dissolved in common raw linseed oil, assisted by a gentle heat, until it becomes entirely taken up by the latter, after which it may be applied to substances for adhesion to each other, in the way common glue is applied. It dries almost immediately, and water will exert no action upon it. It is unnecessary to say how many valuable purposes in the arts this application may be used. For cabinet makers it is important, as mahogany veneers, when glued by this substance, will never fall off by exposure to the atmosphere. In ship building it will probably answer a valuable purpose, as it has infinitely more tenacity than common glue, and becomes impervious to water.—*Far. & Mech.*

Economy of Labor-saving Machines.

A little reflection will show, that to save time is a great gain, while a liberal, though economical expenditure of money is equally so Labor-saving machines in a farm-kitchen are, therefore, of the utmost importance, as they not only save time, but strength; for instance, if a farmer expends a few dollars in the purchase of a churn so constructed, that it will bring butter in five, ten, or twenty minutes, and afterwards work the butter fit for printing, and this only by turning the handle (and there are such churns now in use,) he will soon perceive that he has gained more than at first sight he could think possible. If he adds to this, pans for hot water, in which the milk-pans can be placed to prevent the new milk from cooling too rapidly, he will find on churning day that he has gained one-fifth more butter than by the ordinary method. If such liberal conveniences are allowed the farmer's wife and daughters, as the modern sausage-chopper, that noiseless friend to the farmer's wife, that will silently do in two hours what it would take a man a whole day to accomplish by his single arm; or if a wood-shed in which the kitchen shall open, where a space can be portioned off for barrels and boxes that are to be receptacles for all sorts of things that the women should have in use close to the scene of their labors, and to receive trash that otherwise would be thrown out, littering the yard, and giving an air of unthrift that is always disgusting, and if saved in barrels and carefully collected on a compost heap, will serve as manure for the garden or farm, of the best quality, the farmer himself will find in a short time, that in saving his strength, time and health, he has gained at the end of the year, at least, the price of the labor-saving machines, and the following year, there will be a clear profit of money as well as time, that can be spent more profitably in lighter and equally useful occupations. If in the above mentioned wood-house, a row of barrels be placed close to the kitchen door, one for ready made soap, one for soap-fat, into which is previously placed twenty-five pounds of potash, and two barrels of water, one for pig-slop, another for bones and all the worthless scraps and sweepings of the house, and another for chicken feed, the following results will take place:—The soap being close at hand, can be used, when it is wanted, and there will be no excuse for things not being kept perfectly clean. If the barrel of potash and water be kept close at hand, ten times as much soap-fat will be *gathered* and *saved*, as if the barrel were not there; for it will take no more time to throw it there than into the pig's barrel, or to the dog. The potash will prevent the fat from becoming mouldy, or filled with skippers, which it is apt to do when collected in the usual way. The soap will make itself, if stirred once or twice a week. Potash, instead of lye, is most economical, as it is more certain in its results; and the ashes are more valuable on the manure heap or pasture land than what the soap is worth. The pig-slop will be under the mistress's eye, and ingredients neither too good nor too bad will be put in. The bones and scraps, now so highly prized as manure, may all be saved; and last, not least, dirt is not made, and the time and strength that would otherwise be taken in cleaning and scouring are saved for better purposes; and the chickens may be regularly fed without waste of time.

On a farm, as in a bee-hive, all should be workers, and the drones sent out. The women, as well as the men, should work; but all will find that the best economy is to save, whether it be in time or money, or strengrh, though all should be diligently, carefully, and liberally used, if the farmer wishes to thrive. If from a careful management of time, you save one hour a day, either from unnecessary sleep, pleasure, or ignorance, you will gain in five years, seventy-five days and two hours for profitable improvement of mind or means.—*American Agriculturist.*

Co-operation of the Wife.—There is much good sense and truth in the remark of a modern author, that no man ever prospered in the world without the co-operation of his wife. If she unites in mutual endeavors, or rewards his labor with an endearing smile, with what confidence will he resort to his merchandise or his farm, fly over lands, sail upon the seas, meet difficulty and encounter danger, if he knows he is not spending his strength in vain, but that his labor will be rewarded by the sweets of home! Solitude and disappointment enter the history of every man's life; and he is but half provided for his voyage who finds but an associate for happy hours, while for his months of darkness and distress, no sympathizing partner is prepared.—*Dollar Newspaper.*

MECHANICAL DEPARTMENT.

Improvement in Hemp-Brakes.

We copy the following description and illustrations of an improved Hemp-Brake from the "*Farmers Library and Monthly Journal of Agriculture.*" It is a matter which will interest, and perhaps benefit, many of our readers.—John S. Skinner, Esq.—*Dear Sir:*—I send you the description and drawings of a Hemp-Gin, invented and recently patented by my brother, Franklin P. Holcomb, under the following circumstances: My brother, who is a civil engineer by profession, but possessing fine mechanical talents, was stopping with me at my farm, when I happened one day to be reading, from the Farmer's Encyclopædia, what Mr. Clay says in an article he furnished to that work on the subject of Hemp-Machines, which is to the effect that no machine had ever been invented, and he feared none ever would be, to answer as a substitute for the hand-brake. I told my brother that he owed it to the fact of his having been *a farmer's boy* to supply, if possible, this great desideratum to the hemp-growing interest; and also expressed the opinion that we might probably grow hemp here to advantage, if the breaking and scutching could be done by machinery.

He finally went to work at it, and I sowed a small quantity of hemp, which we water-rotted. This we got out with the machine. Still he did not think it perfect or right, and went on improving, and altering, and experimenting, for almost another twelvemonth; and meantime I grew a second crop of hemp for him. This we also got out with the machine, and had a portion of it manufactured into rope. And, finally, the great difficulty that had troubled him so much—the waste in the scutching—was overcome, and we had the satisfaction of seeing this simple little machine break and scutch, with the least possible waste, at the rate of about, 1,000 lbs. of clean, merchantable hemp per day—doing the work of some twelve or fourteen men.

But meantime Mr Billing's machine had made its appearance; and our friend Gen. Tallmadge had commended it so highly in his Address before the American Institute, that my brother, supposing the final object had been attained, and never having entertained any pecuniary views in connection with it, proposed doing nothing farther with his machine. But he subsequently learned that Mr. Billing's machine, though no doubt an excellent one, was large, somewhat complicated, and costing four or five times the price of his, and probably intended rather for a stationary power to work in a manufactory, than for the general use of hemp-growers, to be worked by their hands, on the plantation, or in the fields. Under the circumstances he applied for a patent, which was granted, and Mr. Obed Hussey, of Baltimore, machinist, the ingeneous inventor of the Reaping Machine, has become interested in it, and will take means to introduce it to the attention of the hemp-growers of the West.

Nothing can be more simple in its construction, The rudest and roughest hands can work it, and with little danger of its getting out of order. The cost of it will only be from $75 to $100, exclusive of the horse-power. It requires about a two horse power to work it. From my own experience in the use of it, I can confidently say, and assure my brother farmers of the West, that the largest crop of hemp they grow would hold out no terror, so far as the breaking and scutching of it was concerned, with the use of this machine. My clear conviction is, that it will go into very general use in the hemp districts, and prove an important acquisition to this branch of Agriculture; and if it does, though not having the slightest pecuniary interest in it, I shall feel myself highly rewarded for the interest I have taken in the enterprise.

Truly yours.

CHAUNCEY P. HOLCOMB.

Devondale Farm, near Newcastle, Del., 1847.

SPECIFICATION OF HOLCOMB'S HEMP-BRAKE.

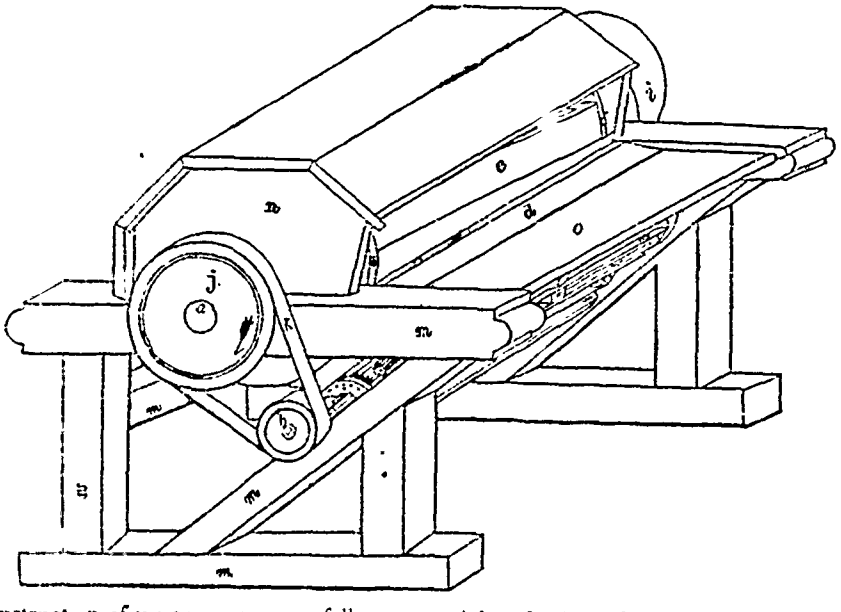
To all to whom these presents shall come:

Be it known, that I, F. P. Holcomb, of the town and county of Newcastle, and State of Delaware, have invented a new and useful machine for breaking and cleaning hemp at one and by the same operation, and that the following is a full, clear and exact description of the principle or character which distinguishes it from all other things before known, and of the manner of making, constructing, and using the same, reference being had to the accompanging drawings, making part of this specification, in which fig. 43 is a perspective view, and figure 49 a verticle section of the machine. The same letters indicate like parts in all the figures.

In machinery heretofore employed for breaking and cleaning hemp, &c. at one operation, by revolving brakes, the hemp has been acted on during a large portion of the circle of revolution, the hemp being broken by passing it between a pair of rollers or revolving breaks and scutchers, that mesh into each other, and break the hemp, by bending it short between them. This method is highly objectionable, in consequence of the great length of the fibre over which it is scraping, which is found to wear the hemp in practice so as to render it unmerchantable; it has also been attempted to break and clean the hemp between a revolving break and a stationary concave, but this method is liable to the same objections. In fact, the hemp never can be broken and cleaned by the same roller that breaks it, without subjecting it to injurious wear. Consequently, the machines have been abandoned as useless; for if the hemp is broken by a stationary break, against which the revolving break acts, and thence passes to another wheel, placed in contact with said revolving break, to be scutched, the break scrapes over the hemp the whole distance from the bed-brake to the point where the scutcher acts, and wears the surface into tow.

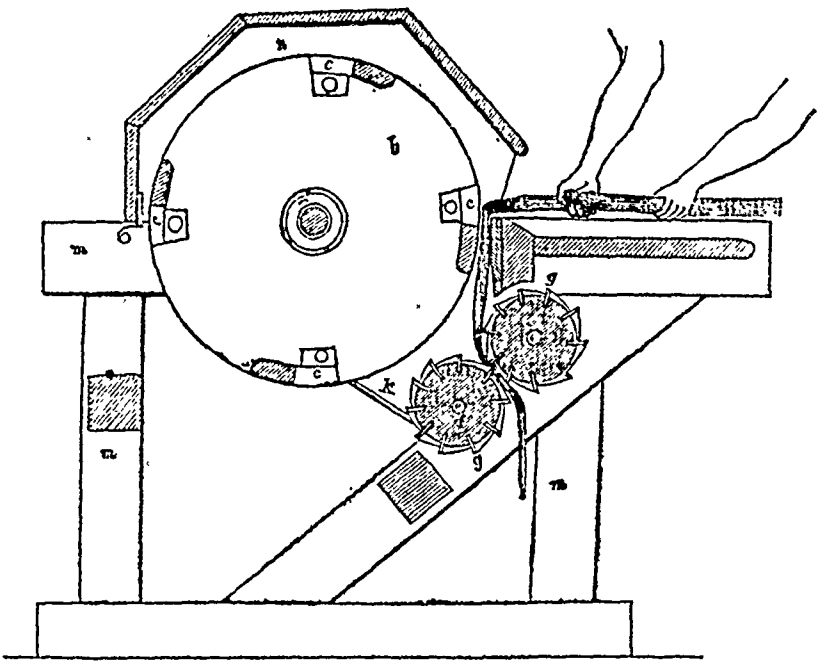
My invention is for the purpose of obviating these difficulties, and is of the following nature: I employed a large revolving break, with the swords set at a tangent (this is necessary to the well working of the machine, as a small one would present the swords at too great an angle,) which acts against a stationary bed-plate, and there breaks the hemp as it is presented by the hand. The ends of the hemp, as soon as they pass down below the edge where they are broken, are thrown off by the centrifugal action of the revolving blades, and they do not come in contact with it any more, but as the hemp is fed in the ends aforesaid pass down and are caught between the scutchers at the angle of their junction, without laying against either so as to be rubbed, and is thus cleaned. The scutchers are very small cylinders, with blades projecting from them radially, that only mesh slightly (if at all) past their pitch-lines; these only act on that part of the hemp immediately between them, or at the junction of their curves to clean it, and it passes through them without injury—which is not the case where the breaking and cleaning are done by the same wheel or roller on the different parts of its circumference.

Perspective view of F. P. Holcomb's Hemp and Flax Gin.



The construction of my apparatus is as follows: On the cap-pieces of a suitable frame (*m*) I suspend a shaft (*a*) in suitable bearings, on which I affix two cylinder heads (*b*), to which I attach any suitable number of slats or beaters (*c*); these are placed diagonally, and are made to act on a straight, horizontal, stationary bed-piece (*d*), which is armed with iron and attached to the frame(*m*); back of this bed-piece, and a little below its surface, there is a feed-board (*o*), over which the hemp is fed into the machine; just below the bed-piece, two small scutcher cylinders

Sectional view of F. P. Holcomb's Hemp and Flax Gin.



(*f*) are so placed as to receive the hemp between them without wrapping on either, the blades (*g*) of which may work into each other more or less, according to the material to be acted on. The hemp is held in the hand of the workman to be cleaned, and is presented over the bed-piece (*a*), (as clearly shown in figure 49,) where it is gradually broken as it is pushed in, and the ends are thrown out. The hemp in this way is fed in, cleaned half its length, and turned and the other half finished, and the hemp comes from the machine in a perfect and merchantable state.

Having thus fully described my machine, what I claim as my invention, and desire to secure by letters patent, is the combination of the stationary bed brake add the rotary break, and small scutchers arranged in the manner described, so that the hemp can be fed in by hand, broken and cleaned with but one handling and at one operation—the breaking and cleaning being done on separate cylinders, but the parts so arranged as that they are brought close together, and so adjusted as to only allow the machine to touch that part of the fibre that is to be acted on, thereby preventing its wear in the machine.

—*Genesee Farmer.* F. P. Holcomb.

Albumen— a Cure for Dysentery.—The following is a recipe for the cure of this complaint, which was published by the physicians of Spain, in the *Gazette* of Mardrid, during 1840:

"Prepare a draught of Alumen, by taking the whites of forty eggs or more, and, if necessary, with a small portion of the best double refined sugar. Let the patient drink large quantities of this repeatedly, insomuch as to fill his stomach, administering clysters of the same as often as possible. The patient must maintain a total abstinence from diet of any kind. In a few hours after, the pains will abate, and in twenty-four hours the disease will disappear; if it do not, it will be sure to disappear in forty-eight hours, provided the patient repeat the draughts as usual."

The Turnip Fly.—A writer in the *Leeds Journal*, a British publication of much merit, under date of May 10th, 1847, says, that after trying various remedies to arrest the ravages of the turnip fly, he ascertained, by means of a lens, that there was on every leaf of the plant a number of white flattish substances. The same appearances were also noticeable on the seed. He made a strong solution of salt, and soaked the seed, previous to sowing, and the plants from seed thus prepared, were not infested by the fly. The same method he has since adopted with the cabbage, and with the same success.—*Germantown Telegraph.*

"Agriculture," says Socrates, "is an employment the most worthy the application of man, the most ancient and the most suitable to nature."

Lower Canada Agricultural Society.

At the formation of the above national Association, for Lower Canada, we took a prominent notice of it in the columns of the *Cultivator*, and it gives us additional pleasure to observe that its managers are determined to prosecute the good work so auspiciously begun, and to make, if possible, this Association the happy instrument of bringing about a complete reform in the agriculture of Lower Canada. A prospectus of the Association is before us, which clearly expounds its objects and intentions. They may be summed up in the following: 1st, The holding an annual exhibition, for the encouragement of agriculture and general improvement; 2nd, To establish an agricultural and mechanical museum; 3rd, To encourage the establishment of agricultural libraries; 4th, The establishment of an agricultural college; 5th, To cement a bond of union between the local societies and the general one; 6th, To collect and publish correct statistical information relative to the agriculture of Lower Canada.

The Lower Canada Agricultural Society has our warmest sympathies, and we heartily wish that its managers may succeed in accomplishing the exceedingly patriotic and arduous duties they have so zealously undertaken.

The objects contemplated by the society under notice, are precisely those that are intended to be carried into being by its sister society in Upper Canada, and we shall rejoice to see a laudable spirit of emulation existing between them, in carrying their patriotic designs into operation.

On proposing one of the resolutions at a late meeting, Major Campbell made the following observations, which very forcibly illustrate the importance of agricultural schools, where both the practice and science of agriculture may be taught the youth of our land.

"In moving this resolution, I would make a few remarks on a subject to which I have given much attention. The great advantage to be derived by the country at large, from a good system of Agriculture is so obvious that I need not dwell upon it; the means to be employed to introduce and carry out such a system are what we are called upon to consider. I know of none so efficient for this purpose as the giving to our rural population a sound practical education; in vain shall we offer prizes for good stock and well tilled farms, unless we teach the competitors the art of rearing the one and cultivating the other; let us commence with the rudiments of the science, and by and by we may attempt the higher branches. I am speaking now, not in the capacity of a public officer, but in that of an inhabitant of this Province, identified with all its interests, bound to it by the tie of property, and to one race of its occupants by the nearest and dearest tie that man can form; on more occasions than one, a habitan has come to me and expressed a desire to give his son, who appeared to have some talent, a good education; the question has then been asked how is this to be obtained? either the lad must go to the common school, where at the present moment, I fear, he would learn but little, or he must be sent to a College, where he will be instructed in Mathematics, Latin and Greek; and when he has finished his course of studies, he will return to his father's house, to be spoiled and petted by his too indulgent parents proud of their well educated boy. Does he now aid his father in the cultivation of his farm? No such an occupation is beneath the dignity of his learned youth. He must be a lawyer, or a doctor, and thus add another to one of these already over stocked professions; the home of his childhood is despised; the coat of *etoffe du pays* is exchanged for one of superfine Saxony; he takes up his residence in a village, administers law or physic to any habitan who will trust his case to him, and spouts politics whenever he can collect two or three neighbors together. I appeal to the many gentlemen born and brought up in this country who now hear me, if this picture is overdrawn? One of the chief objects of this Society is to remedy the evil by establishing a school and model farm where the rising generation may learn practically and theoretically the science of Agriculture; the youth from this school will, I am firmly persuaded, return to their homes, to be assistants to their parents, and useful members of society; and the occupation of cultivating the soil be raised, thereby, in the estimation of the community. I trust my life may be spared long enough to see such a school established in every parish of the Province."

Financial condition of the Agricultural Association of Upper Canada.

The premiums in money and books awarded at the late Provincial Show at Hamilton, will equal the very large sum of £750. To this must be added printing and contingent expenses

arred by the Association, amounting in all to bout £75. To pay this large sum, the Associaion had £70 surplus, after paying the expenses f last year's Exhibition; £150 realised in subcriptions from annual members and persons enring for competition in 1847; and also, £109 ollected at the gate, on the second day of the xhibition. It is not yet ascertained what the ross amount will be, that the various Agricultral Societies of the country have voted in favor f the funds of the Association, but it may be irly stated that the amount will not exceed 150. Added to the above, the Governor Genl's Donation of £25; and also the one awarded y the Canada Company; amounting in all to 529; leaving a balance against the Association upwards of £300. The Officers and Managers the Association will exert every means in their wer to liquidate the debt, which can only be ne by obtaining immediate aid from Governent, by further assistance from Agricultura xcieties, and from donations and subscriptions om the friends of the movement throughout vaous parts of the Province. The Premiums arded by the Association, as well as debts ntracted, must be paid without delay; and as e of its officers, we shall not fail in employing ry means in our power, in liquidating the bts and claims against the Association at the rliest possible period.

Science with Practice.

Upon this subject the Rev. Mr. Huxtable, of gland, observes—

'By what process of cultivation, when we nure highly for wheat, the straw can be so ch stiffened as to bear the increased weight ar, is at present, in my humble judgment, one the great problems in agriculture that presses solution; as it is well known that this stiffs arises from the presence of the silicate pot- (an imperfect sort of glass), chemists have gested that this soluble silicate, or that of a, should be added to the ammoniacal ma- s which we use for wheat: but these salts expensive; nor am I aware of any experits having been made which would justify our ring the outlay for them. Moreover, some resting facts mentioned by Professor John- (*Journal of Agriculture*, p. 103, 1845) shew there is already abundant silicia in our cul- ed soils, and that plants are able to decompose and extract silicia for their use, even from the most stubborn silicates. If there be alkali enough at hand, the vital forces of the smallest living plant will form the silicates it needs—a process which man accomplishes only by the blast of the hottest furnace. I think, therefore, that in seeking to remedy weakness of straw, we should rather try to diminish that rankness of vegetation in our own crops, which causes that weakness; and this I think we can accomplish by a simple application. I think there is one cheap and effectual remedy: it is common salt. This will make the straw heavier and stiffer, and correct the tendency of the ammonia, in the manure, to produce a rank vegetation. Mr. Prideaux, of Plymouth, informs me that wheat grown very near the sea stands up better than that grown inland. Mr. Hannam testifies to the increased weight of the straw. Mr. Gardiner (*Highland Transactions*, p. 239, 1844) states, 'that 3 cwt. of salt per acre, thrown over wheat in May, produced no change of color, but improved the tillering of the plants, which had small stiff, shining, wiry straw.'

"Bones digested in sulphuric or muriatic acid have the same tendency to check rank vegetation and to strengthen the straw; see *Mr. Gardiner's Experiment*, p. 242; also an experiment of Mr. Fleming (*Johnston's Lectures*, Appendix, p. 28,) who dissolved his bones in muriatic acid, and applied the mixture to oats sown upon moss: he says that the straw appeared as stiff and shining as if it had been grown upon stiff loam.

"I think, then, that a *perfect* top-dressing for the wheat crop, on light lands, should be composed of 2 cwt. of bones, well digested in 1 cwt. of sulphuric acid, 5 cwt. of shoddy, and 3 cwt. of salt; thus, in good years you might, I believe, grow six quarters of wheat per acre. On all light soils this assistance to the wheat should be given in the spring; but as in clay the decomposition of the shoddy is so slow, I should apply this manure when I sowed the wheat on my heavy land in the autumn. There is yet another way of growing a heavy crop of wheat on clay: lime the fields in autumn, two or three weeks before sowing; top dress in the spring, with superphosphate of lime, 3 cwt. of salt, mixed with 30 bushels of clay ashes, which have repeatedly been soaked in urine. I am vain enough to believe that this manure, suggested for wheat, will prove valuable, and quite worth the half-crown which you paid for your tickets.—*Gen. Far.*

Horticulture.

THE GARDEN.

The flower-garden will have now lost its principal attractions, as the wintry season rapidly draws near. Let us therefore linger with redoubled pleasure among the few last flowers of summer that yet remain to gratify the eye, and dwell upon their beauties with prolonged delight. The frosty breath of winter will be shortly here, when the few yet blooming will perish too, and none return to take their place.

How sweetly smells the *Mignionette*, scattered in many rounded tufts or spread in lengthened lines along the grounds! The *Darling plant*, with "most sweet smelling flowers," so innocent and unassuming, one cannot help but love it. How many memoirs of home and happiness and days for ever fled, dwell with it. The windows, fragrant with the dark-green boxes, re-appear; and the little watering-can we used to be so fond of carrying to mama, that we might be rewarded with the liberty of emptying it over the flowers up-stairs. It is such associations as these that endear the simplest flowers, and make us prize them more than their intrinsic value warrants.

The perfume of this pretty little plant, the *Reseda Odorata* of Botanists, may, by proper attention to sowing, be made to gratify the sense all round the year. Seed sown in the end of July, and potted in September, will blow in January and February; another sowing, at the end of August, will produce flowers in March, April and May; and a third sowing, in February (which must of course be made in pots or boxes), will succeed those sown in August.

Now turn and gaze upon this bed of glowing Dahlias, whose brilliant flowers mount almost to a level with your face, not dreading, but inviting as it were, your closest scrutiny. In them the triumph of the Florist dwells; as, through their art, these flowers, produced from the seed of the single purple Dahlia, found growing on the sandy plains of Mexico, have had their petals multiplied until they have become as full as the China-Aster, whilst their colors display a richness that rivals the gaudy Tulip, and the finest velvet tints.

What pity such a glorious flower should have no perfume. But who can limit man's ability? If in the few short years, since 1830, that it has been cultivated, it has attained its present perfection of form and beauty of color, what is to prevent the assiduous cultivator from yet imparting to this splendid plant the perfume of the Rose.

How pretty they look, all neatly tied to separate stakes, and cleared of superfluous branches whose presence only withdraws the nourishment from the flowers, without improving the general appearance of the plant. Much more than half the pleasure we derive from pretty flowers is attributable to the care bestowed upon them, and the neatness of their appearance. Of themselves they are essentially beautiful, and being so, every thing offensive to the eye should be carefully removed from about them. Keep the ground ever free from weeds; and let every plant and flower of your garden prove to the spectator, that you consider it worth the trouble of attending to. Better a few flowers well kept, than a multitude in disorder.

Here is a lovely row of the white Antagonist looking as pure and innocent as "the young thing just new come fra' her mammy;" and there, in rich contrast beside it, the splendid crimson Napoleon greets the eye: to these succeed the lilac Queen of Beauties, the scarlet Fire-king, and the yellow Prince of Wales. But we must not, while admiring the beauty of the flowers thus exhibited in beds, neglect that line of variegated sorts along the back of the border, nor that very elegant circle formed around the Siberian Crab-tree. Before I forget, however, I must urge on all cultivators of flowers the propriety of a very careful attention to the preservation of the *correct* name of every thing they raise. Inattention to this department, being the source of much perplexity and disorder, is almost as blameable as indifference to the order, arrangement and neatness of the garden itself. The question almost invariably asked, when the first exclamations of delight at the sight of a beautiful flower are over, is "What is its name?" Be competent and ready to give the true and not a substituted name. For this purpose, instruments technically called *Tallies* must be used; their object is to record and render ascertainable the individuality of the plants, whether as to species, genera, or varieties. Whenever plants are cultivated, it is desirable to be able to mark and distinguish them, as well in a growing state as when in a state of hybernation or recent insertion in the soil. Various methods have been adopted and a variety of Tallies invented for this purpose, some being stuck in the

and, others suspended to a branch; some
ed conspicuously in view, others carefully
ealed about the plant. Some we have seen
ge enough for an epitaph, raised, as it were,
record the virtues of the root beneath; and
e so clumsily formed as to disfigure the
nds, and so badly written as to have become
gible and therefore useless. For our part, we
er a system in which the agent is as little
spicuous as possible, usually painting the tally
early as may be of the color of the leaves or
ns, and suspending it among the foliage or
inst the stakes. Let each grower, however,
pt some of the various methods in use, and be
edingly particular in procuring first the true
e, and afterwards in preserving it.

at to return "*to our muttons.*" The *Dahlia*
to be ourselves exact in following the advice
given respecting *nomenclature*—as it ought
e correctly to be called, the *Georgina*, being
elicate plant, frost at once blights its dark
n foliage, and when this occurs, cut off the
ks to about four inches from the ground and
your tallies on the stumps; leave them thus
or three days to bleed, then lift them care-
y from the earth, shake off the soil, and pack
n away in a box of *dry* sand in a *dry* warm
n for the winter: and as late planting ensures
finest flowers, and prevents the ravages of the
ex or green bug, which proves so pernicious
ose of early planting, it would be advisable
fer the planting of them till the middle or
of June.

hence this delicious fragrance of mingled
ge-flowers and roses? It comes from those
rows of Sweet Peas, (*Lathyrus Odoratus*),
tefully trained to hide the unsightly fence.

re are Sweet Peas on tiptoe for a flight,
wings of gentle flush o'er delicate white;
taper fingers catching at all things,
nd them all about with tiny rings."

he-bye, this is just the time for sowing
et Peas to flower in the house during winter.
earth used should be rather stiff, and the
of the deepest kind, and they will need very
ent waterings.)

hat group planted round the Lilac yonder
a fine effect; they

—Catch the neighbouring shrub
clasping tendrils, and invest his branch,
nadorn'd, with many a gay festoon
fragrant chaplet, recompensing well
strength they borrow with the grace they lend.

Here are our long-time friends, the *Balsam*, the *Aster*, and the *Marigold*, still displaying in wondrous rich variety their bright and gaudy colors, and standing it out, like veterans, to the last.

Some of the seed-pods of these Balsams are turning yellow, and must be gathered. Ha! you start like a child when he is first initiated into the mysteries of the terrible Jack-in-the-box. They cannot bite, however, neither do they sting; but you must approach them very cautiously, as though about to catch a butterfly, and either fold your hand around the pod, and allow it to burst in your palm, or take hold of the thin stalk and pull it carefully from the stem.

From this natural impatience to the touch, has originated its generic name, "*Impatiens.*" This beautiful flower, "with shaft of amber," deserves more attention than florists have of late years bestowed upon it. To one unacquainted with the effects produced by rich soil and proper management, it would appear incredible that it can be made to rise to a height of four feet, and obtain a circumference of fifteen feet, with strong stems covered with large double flowers. Such, however, is the fact, and a magnificent reward it is for all the pains bestowed upon it.

We are far behind the Chinese in the cultivation and arrangement of those elegant flowers, the Asters. Our most curious amateurs have yet to learn what effect these plants will produce by their gay corollas, when carefully distributed by the hand of taste. Let the imagination picture a bank sloping to a piece of water, covered with these gay flowers, so disposed that they rival the richest patterns of the carpets of Persia, or the most curious figures that the artist in fi agree can devise;—see these reflected in the liquid mirror below, and some idea of the enchanting appearance which these brilliant stars are thus made to produce, in the gardens of China, may be conceived.

With us, they are planted in the most careless manner, without the least attention to general harmony or design of any kind; it being considered sufficient to have raised a superb variety, without regard to grouping. When the color cannot be depended upon, the plants should be kept in a nursery bed till the first flower has expanded, and, then, availing of the first rainy weather, they may be removed to their permanent blooming places, where the taste or art of the

cultivator can be displayed in the distribution of the colors and the arrangement of the figures. In gathering the seeds, select them from the flowers of the centre or principal stem only, as the flowers on the lateral branches are never so large or so double, and consequently produce inferior plants.

That arbour and trellis-work are richly clothed with the elegant foliage of the Madeira vine, contrasting beautifully with the long white flowers, whose fragrance, resembling that of the Queen of the Me dows, is diffused far and wide. This plant, being a very late flowerer, is usually cut down by the f. st before the flowers expand, which is very much to be regretted, as their fragrance is so rich. It can, however, be flowered readily in the house, if planted in a tub or round box, and after having been kept out all summer, it be taken in when the cold weather sets in. Independent of its flowers, it is well worthy of cultivation as a rapid climber, to cover with its richly delicate green foliage those portions of the grounds where a verdant mass is desirable. It will throw out shoots of sixty feet in length within the season. W . n killed by the frost, take up the roots and treat exactly as you would a Dahlia.

Here is the ever-blooming Phlox, than which no flower aids more to embellish the garden, as it blooms uninterruptingly from May till the frost; and in the present month, when flowers are scarce, the garden stocked with these has even yet a gay appearance. It is becoming a great favorite amongst cultivators, is easy of propagation and abundant in variety. The soil most appropriate is a rich sandy loam; and it is propagated by dividing the roots, now or in spring.

We are glad to see those magnificent Hollyhocks; the florist possessed of taste will not reject them because their hardy nature and easy propagation have rendered them so common, as they yield to no flower for the grandeur and beauty of their appearance, and the great variety of their colors. The noble stalks these plants send up, like so many floral banners garnished with roses, render the Hollyhock particularly desirable for ornamenting the borders of plantations and giving variety to the shrubbery in the later season of the year. Its aspiring height befits it for a noble situation, and it rises with a degree of dignity, from amongst clumps of flowering shrubs, that is not excelled by any plant whatever. Taste is requisite in the disposition of t plant: to place them along the fence or bor in straight rows is one of the errors never s in nature, and has as bad an effect in the gar as a straight line of Lombardy Poplars in a pl tation. Clumps in the corners and at irregu distances along the fence are pleasing to the e and render less conspicuous the limits of grounds. It used to be in great esteem medicinal plant, having the supposed virtue curing the dysentery; in fact, its botanical na "Alcea," is derived from a Greek word signify aid or stre gth. The stalks of the choicest rieties should be cut down to the ground w the beauty of the flowers is faded, and not p mitted to mature their seed, as this frequently impoverishes the plant that it decays during winter. No apprehension need be entertai about the waste or loss of seed, as a single will yield sufficient for a large garden.

"But see, the day is waxen old,
And 'gins to shut in with the Marygold;"

and we must bear ourselves away, with greater regret, that, ere the month comes t close, all these beautiful flowers we have had much delight in examining will have fled,

"And, like the baseless fabric of a vision,
Leave not a wreck behind."

Before another month comes round, the flow garden will have become a desert; and altho this must occur in the ordinary course of nat yet we cannot help regretting the loss of th we loved so much.

Fade, flowers! fade; nature will have it so;
'Tis but what *we* must in *our* autumn do!
And as your leaves lie quiet on the ground,
The loss alone by those that loved them fou
So in the grave shall we as quiet lie,
Miss'd by some few that lov'd our compan

Horticultural Memoranda for October.

Sow hardy annu ls in warm borders;—thou all the seed may not grow up in spring, some w be spared, and these produce the finest flowe The sorts fit for this are Larkspur, Portula Pansy, Adonis, &c.

Plant bulbs and tuberous roots, such as A mones, Crocuses, Crown Imperials, Hyacint Irises, Jonquils, Lilies, Narcissus, Tulips, & These may be planted, in beds or in borders, fr 2 to 3 inches deep, and about 4 inches apart, cording to their size, the ground having b previously trenched 3 feet deep

Transplant herbaceous plants of all sorts.

Protect the tenderer sorts of herbaceous plants, daisies, &c., with a light covering of manure. ace Pinks, Carnations, and tender Roses under cold frame.

Take up Dahlias, Tuberoses, Tigridias, Gladiolus, and other tender bulbs, and lay them away winter.

Cover over the *Strawberry* and *Asparagus* beds th decayed hot bed manure.

Thin *Raspberries* of their dead wood, and tie the shoots intended to produce fruit next ason.

Sow peach, plum and cherry stones; gather ws and take them to the rot heap, covering th a mixture of earth and quick-lime. Don't glect the last, if you wish to obtain a hawthorn dge to protect your grounds.

Evergreens and shrubs, deciduous trees and nt-trees, may be transplanted. Dig the hole ere they are to be removed into, about twice size of the root, make the bottom perfectly el and the soil friable, then, placing in the tree, ow the earth carefully round the roots, avoiding much pressure.

Grape-vines must be pruned of their unripened od, laid down, and covered with long litter out 4 inches deep.

Lift *Cabbages*, and hang with clean roots in cellar, or put them by in pits, carefully reving all outside leaves.

Pack *Celery* in dry sand in the cellar.

Lift *Beets*, *Carrots*, and *Parsnips*, and pack in sand: Carrots should have their tops first ed off to the depth of half an inch, as this rents them from growing; they keep better d don't turn soft in spring.

Cover *Spinach*-beds with dung.

Cauliflowers and *Broccoli* must be left with much earth as possible, a few outside leaves moved, and the points of the rest cut down to evel with the top of the flower; then planted dry cellar, where they will head up and keep March.

Hand-pick *Apples* and *Pears*, and pack them boxes or barrels (not on shelves), in a cool m, free from frost. These should be regularly mined every month, and the bad taken out. e finer sorts might be advantageously wrapped paper, and laid in boxes.

And now clear up the grounds, remove all d matter; tie up and lay away sticks and stakes; trench or dig up all vacant ground, as roughly as may be, in order that the frost may act better on the surface.

Greenhouse.—Thoroughly clean every plant, water sparingly every morning, give air night and day unless the thermometer fall too low.

In *Rooms*, place the plants on the stage where they are intended to remain, tallest at the top, and diminishing at the bottom. Do not place saucers under the pots, as these, by retaining the water, keep the roots of your plants constantly wet and cold, and sour the soil To prevent the drip from injuring the carpet, we would recommend that the stage be placed in a shallow wooden frame, lined with tin or zinc; a piece of oil-cloth laid under the stage will do, if the water be regularly wiped off.

Give water sparingly, as, while the plants are in a dormant state, too much wet will cause them to rot or drop off. It is truly painful to lovers of plants to pass some windows, and observe the deplorable condition of the plants there exhibited in consequence of neglect. Leafless sticks, meant for roses; and dried up geraniums, and sickly oranges, stuck into a soil baked sometimes to the consistency of potter's clay, at other times drenched with wet, are displayed at the windows, as if it were intended the passer-by should notice this novel mode of raising flowers. Did the inmates only know to what accusations of carelessness, idleness and negligence, such exhibitions throw them open, they would certainly do one of these three things: either take sufficient care of them; remove them out of sight of passers-by; or give up keeping plants at all.

Put *Hyacinths* in their water-glasses.

The Language of Flowers.

In Eastern lands they talk in flowers,
And they tell in a garland their loves and cares;
Each blossom that blooms in their garden bower,
On its leaves a mystic language bears.

The Rose is a sign of joy and love—
Young blushing love in its earliest dawn;
And the mildness that suits the gentle dove,
From the Myrtle's snowy flower is drawn.

Innocence shines in the Lily's bell,
Pure as the heart in its native heaven;
Fame's bright star and glory's swell
In the glossy leaf of the Bay are given.

The silent, soft and humble heart,
In the Violet's hidden sweetness breathes;
And the tender soul that cannot part,
A twine of Evergreen fondly wreathes.

The Cypress that daily shades the grave,
Is sorrow that mourns her bitter lot;
And faith, that a thousand ills can brave,
Speaks in thy blue leaves, Forget-me-not.

Then gather a wreath from the garden bowers,
And tell the wish of thy heart in flowers.

How the modest Mignionette obtained Heraldic Honors.

The Count of Walsthim was the declared lover and intended spouse of Amelia de Nordbourg, a young lady possessing all the charms necessary for the heroine of a modern novel, excepting that she took delight in creating little jealousies in the breast of her destined husband. As the beautiful Amelia was an only child of a widowed mother, a female cousin, possessing but few personal charms and still less fortune, had been brought up with her from infancy as a companion and stimulus to her education. The amiable and humble Charlotte was too insignificant to attract much attention in the circles in which her gay cousin shone with so much splendor, which gave her frequent opportunities of dispensing a part of that instruction she had received on the more humble class of her own sex. Returning from one of these charitable visits, and entering the gay saloon of her aunt, where her entry or exit was now scarcely noticed, she found the party amused in selecting flowers, whilst the Count and the other beaux were to make verses on the choice of each of the ladies. Charlotte was desired to make her selection of a flower. The sprightly Amelia had taken a Rose; others a Carnation, a Lily, or the flowers most likely to call forth compliments; and the delicate idea of Charlotte, in selecting the most humble flower, by placing a sprig of Mignionette in her bosom, would probably have passed unnoticed, had not the flirtation of her gay cousin with a dashing Colonel, more celebrated for his conquests in the drawing-room than on the field of battle, attracted the notice of the Count so as to make his uneasiness visible; which the amiable Charlotte, ever studious of Amelia's real happiness, wished to amuse; and, to call back the mind of her cousin, demanded the verse for the Rose. The Count saw this affectionate trait in Charlotte's conduct, took out his pencil, and wrote for the Rose,

Elle ne vit qu'un jour, et ne plait qu'un moment,
"It lives but a day and pleases for an hour."

Which he gave to the lovely Amelia, at the same time presenting the humble Charlotte with this line on the Mignonette:

Ses qualites surpassent ses charmes.
"Its qualities exceed its charms."

Amelia's pride was roused, and she retaliated by her attention to the Colonel and neglect of the Count. The Count transferred his affections from beauty to amiability; and rejoicing in t exchange, and to commemorate the event wh had brought about his happiness and deliver him from a coquette, he added a branch of t sweet Reseda (Mignionette) to the ancient ar of his family, with the motto,

"Your qualities surpass your charms."

Transplanting Fruit Trees in the Spring and Autumn.

BY S. G. PERKINS, ESQ., BOSTON, MASS.

First prepare the ground where they are to put, so that water will not remain on or near roots. Examine the roots of the tree before p ting, and *cut out* all rotten or defective roots, *cut in* (shorten) all that are bruised or otherw injured, to sound wood above the wound. careful not to plant too deep, as this may be f to your tree.

If the tree does not put out shoots in the spr at the usual time, or as soon as others do were planted at the same time, give it one g watering at the roots, and no more while it mains fresh, or does not turn black, *wash the h and body* with a watering pot or syringe ev evening at sundown, until it begins to shoot grow, when you may cease watering the h and water the roots if required. I have trees to remain until the last of July without ting out a leaf or shoot of any kind, and that become as fine specimens as any in garden.

No manure should be put to fruit trees, ex it be a little vegetable manure, quite rotten, that mixed with the earth that is to cover roots. The question is frequently asked whe it be best to plant fruit trees in the spring autumn. That in this latitude, must depe the *soil* into which they are put. If the soil a wet, clayey one, it is best to plant in spring; but if it be a light, gravelly soil, autumn is preferable, because you gain fo five weeks in the spring.

If water be allowed to remain about the r of trees that are recently planted, and are growing, it will probably rot them by becom stagnant and putrid. Trees should be plan therefore, so that the water will run over and the roots, which is all they require to afford i nourishment.

Watering the head and body of a tree tha tardy in putting forth its shoots, is the safest,

ked the only sure mode of bringing them out, e a continued watering of the roots is almost destruction to them.

fices planted on a south wall or fence, that do put out shoots in due season, should be ted for several hours when the sun is out, if weather be warm. The leaves may be con- ed a sort of a suction pump, which draws up moisture from its roots and produces its in- ed growth, whereas a tree without leaves, that is not already attached to the ground no means of carrying off the moisture from roots. For example, of two branches of al size and weight, the one with leaves and other without them, are placed in vessels con- ing an equal quantity of water, and exposed e sun, the one having leaves will take up the er part of the liquid, while the other will me comparatively little.

ne years ago, I imported from Paris 210 trees on quince stocks, whose roots, on their al, I found to be entirely black and dead. I d off with a knife all the roots down to the p These I planted in trenches, tying them oss-bars to keep them firm, and then filled e trench with good soil. The heads and s of these trees were regularly washed in eather until they began to sprout, which of them did in abundance during the sum- and finally saved out of the whole number, which became as well rooted and as good as any in my garden.

s has happened more than once. Three or years ago, I imported among other trees, y plum trees, from six to seven feet high eads of which had been budded the previous in France These buds had grown from to twelve inches long, and were perfectly when they arrived: but the roots on exami- n were found entirely dead. Two of these e away. One was good for nothing, and ther seventeen I planted in my garden, g cut off all the roots that had fibres, they ere all dead. One of my men said I might ve split my walking stick. Sixteen of these w flourishing trees, well grown and well d, new roots being induced by means of ng the upper part of the tree.

marks—The foregoing will please such of aders as like plain, sensible advice, from a ighly practical man. We have ourselves with great surprise and satisfaction the trees ed to as having been so successfully trans- planted by Mr. Perkins, under what were the most unfavourable circumstances. The great advantage of the mode he practices, of *watering the bark*, and not watering the roots of a tree, in a half dormant state, our correspondent thoroughly convinced us of in his own garden. Our readers are solicited to put in practice the invaluable advice he gives them. There is no doubt that half the trees that die annually from the ignorance of transplanters, perish from a mistaken notion of deluging their roots with water daily, when their fibres are so feeble as to dread it as much as a patient afflicted with the hydrophobia.—*Downing's Horticulturist.*

DISEASES OF POULTRY.

One of the subscribers of the *Cultivator*, some time since, requested us to publish information upon the diseases that Poultry are more or less subject to; and in our judgment, the following paper on that subject, from a Correspondent of the *London Agricultural Gazette*, is very much to the point.

We are of opinion that the *Cultivator* should be original, and the writers should be those who are intimately acquainted with the numerous subjects discussed in its pages. To make it such, those who have a knowledge of the country and its wants, should, without any ceremony, communicate such facts for the publication as would be adapted to its columns.

Probably the most expeditious method of inducing our farmers to write on Agriculture and the Practical Sciences, as applied to rural and household arts, would be, for a dozen or two of our subscribers to write for our columns, a half dozen questions,—each of which may be either answered by the Editor or some of the Correspondents.

It is much easier to ask questions, than to answer them pertinently; but if a series of interesting questions affecting agricultural practice, or any other subject that could with propriety be discussed in the columns of our journal, were published with a view of obtaining answers from correspondents, the result, in our opinion, would be, that scores would write for the publication who otherwise would not have attempted it. As an illustration of what could be done, if the subscribers of the work would only show a willingness to aid us in the enterprise, we would mention that a lady in Toronto requested a recipe to destroy *cockroaches*, which were at that time very

troublesome inmates of her kitchen. The recipe in question was given; and we need scarcely add that scores of other ladies in this city tried the prescription, which resulted in success. We intend that our publication shall be more original and practically useful for all classes; but to make it so, we want the assistance of scores of able correspondents.

1. *Indigestion of, or Torpid (full) Crop.*—This is a very common ailment, arising from taking cold, unsuitable diet, and other causes. The symptoms are moping, little or no disposition to take food, and hardness of the crop when felt. As a remedy, one or two teaspoonsful of English gin, according to the size of the fowl, has almost an immediate effect. It appears to act as a solvent, for the crop soon becomes soft, and maceration soon goes on as usual. Possibly this may be owing to the presence of the essence of the Juniper berry, as no other spirit has the same effect, but is, on the contrary, deleterious to birds. This is infallible.

2. *Indigestion of the Gizzard.*—It would be difficult to enumerate all the causes for this, as for the former fatal ailment; but it often arises from confinement, locality, exposure to wet, damp, and cold, and most frequently from unskilful treatment in the hands of negligent persons, or those ignorant of the habits or requirements of poultry, such as shelter, wholesome diet, sweet green food, lime, sand, &c, which are quite as necessary as grain. In the farm-yard and fields, the more natural state, birds can procure most of these ingredients for themselves, which in towns, pens, coops, or cages, their perfectly artificial state, must be administered artificially. Rue and fresh butter, or syrup of Rue and Barley-meal, or soot and fresh butter formed into pellets with Barley-meal, with the addition of a little pounded brick, or pounded dry clay, are excellent remedies; or with the addition of a small pinch of allspice, or a few of the allspice corns. A very few minute grains of Cayenne pepper have been recommended, but with great caution; indeed, I would scarcely advise anything so powerful and irritating. The best and only efficacious remedy, after all, is castor-oil, one or two teaspoonsfuls.

Mechanical Aid, when the crop is overloaded and medicine fails to promote maceration, must be resorted to and be effected by discharging its contents by gentle pressure, with great care and ; ce. through the mouth.

When, however, the co tents swell, and are a n ture impossible to remove in that way wi out violence, which must never be used on count of the danger of lacerating the throat, oper tion by a skilful hand is necessary, but quiring great trouble and attention during heali g pr cess. A small slit must be made in lower part of the crop, through which the n ious substances can be extracted. One or sutures should then be neatly made wit needle and thread to hold the sides toget which will soon heal.

More sutures than are absolutely necess would prevent healthy suppuration, which is quisite, in order to encourage the healing proc Care should be take to keep the wound cl but without damaging the sutures. The fo must be kept within doors very quiet, and u soft diet until recovered. But this sort of op tion is often more curious than useful, if not el, unless the patient be one of some value.

3. *Oon, or Lush, or Shell-less Eggs.*—W a hen lays this sort of egg, and not habitu the occurence is generally accompanied with l or full crop. In that case, it is owing to indi tion, to be treated as before with one or teaspoonsfuls of English gin. One cause is to be over-feeding when fowls are too fat.

These eggs are generally dropped from roost, and if it is not too high from the floor, they fall on straw, may be saved entire and for puddings. As to symptoms, experience make known the indications, and the time a hen is about to pass one of these eggs, b pearing somewhat dull, and uneasy when ing about; when proper precautions shou taken to secure it, and prevent the other from gobbling it up. When this occurs fro digestion, the shape of these eggs are, often fold, either like a funnel, the protuberance about 2 inches long, ending with a thin t twisted up at the end, or otherwise twain small) eggs, joined by a membrane, about a long; one containing the yolk, the othe white. The cause for this curious deviati shape I have not ascertained. But whe happens habitually, which is not uncommo shape is in every respect as usual, and the is some derangement or injury of the pa through which the egg has to pass, after the has detached itself (by its own weight, as it from the size of a pea's head) from the p

h attaches it to the egg cluster, before the e egg reaches the sack, just previous to being

The writer has a favourite hen, which al- regularly drops these eggs from her roost, never lays any others, and has done so for five years past, although in perfect health. is circumstance is attributable to the ignor- nd cruel practice of "groping" with the fin- which cannot be too often denounced and bated, as noticed in a former paper. When eggs break within, the yolk and the white ass off, but the skin will often remain and a hard "extraneous substance," often be- g putrid. This is the case when the cause digestion, of which they often die, if not d to get rid of this obstruction. The surest ly in this case is a dose of castor oil, which n fails to cure the cause and remove the ob- ion. But a precaution against this occur- (when possible) is to assist in removing this rtificially, before it has time to become a e, when it is observed to hang from the

Experience and observation alone can he extreme nicety of this operation, so as l to success. It often occupies a quarter of r of time, and requires great forbearance uience.

Egg-Bound.—This is a fatality which is unfrequent occurrence, arising from an in- state of the organs, when a fowl does not al, in due time, get rid of an egg, which main in the egg-bag for some days, often ing very ill consequences. The symptoms oping, awkard gait, enlarged appearance nging down of the abdomen. The causes ious; but generally a cold, and often indi- . The remedy is sometimes speedy: a ains of salt put into the entrance, but using any violence, will excite an im- disposition to lay, when the fowl will run anter to the nest. If caused by indigestion e must be treated accordingly.

Prevent Wood Decaying.— Take twelve of rosin and eight ounces of roll brimstone, coarsely powdered, and three gallons of il. Heat them slowly, gradually adding nces of beeswax, cut in small bits.—Fre- ir the liquor, which as soon as the solid nts are dissolved, will be fit for use. emains unused will become solid on cool- d may be re-melted on subsequent occa- sions. When it is fit for use, add as much Span- ish brown, or red or yellow ochre, or any color you want, first ground fine in some of the oil, as will give the shade you want; then lay it on with a brush as hot and thick as you can; some days after the first coat is dried give it a second. It will preserve plank for ages, and keep the weather from driving through brick work. Com- mon white paint may be used on top of it, if re- quired, for the sake of appearance. Two coats should always be given and in compound machi- nery, the separate parts should be varnished be- fore they are put together, after which it will be prudent to give a third coating to the joints or to any other part which is peculiary exposed to the action of moisture, such as water-shoots, flood- gates, the beds of carts, the tops of posts, and all the timber which is near or within the ground. Each coat should dry before the parts are joined or the last coat applied. The composition should be applied when the wood is perfectly dry. It is necessary to mention that compositions made of hot oil, should, for the sake of security, be heated in metalic vessels, in the open air, for when the oil is brought to the boiling point, or six hundred of Fahrenheit, the vapor catches fire, and though a lower degree of temperature should be used in this process, it is not always possible to regulate the heat, or to prevent the overflowing of the ma- terials; in either of which cases, were the melting performed in a house, fatal accidents might hap- pen.—*Archives of Useful Knowledge.*

How to Whiten Linen.—Fruit-stains, iron- mould, and other spots on linen, may be re- moved by applying to the part, previously washed clean, a weak solution of chloride of lime or of soda, oxalic acid, or salts of lemon, in warm wa- ter, and often it may be done by merely using a little lemon-juice. The part which contained the stain, or spot, should shortly after be thorough- ly rinsed in clear, warm water (without soap), and immediately dried in the sun.

Linen that has acquired a yellow or dingy color by careless washing, may be restored to its for- mer whiteness by working it well in water to which some *strained* solution of chloride of lime or of soda has been added, observing to well rinse it in clean water, both before and after the immersion in the bleaching liquor. Never at- tempt to bleach *unwashed* linen, and avoid using the liquor too strong, for in that case the fabric will be rendered rotten.—*Am. Ag.*

Rules for Mechanics.

The following convenient rules for Mechancis and others, although not perfect in their fractional parts, are, nevertheless, correct enough for all practical purposes. They were compiled by a writer in one of our exchanges.—*Far. & Mech.*

To find the area of a Triangle—Multiply the base by the perpendicular height, and take half the product for the area.

To find the area of a Circle—Multiply half the circumference by half the diameter, and the product will be the area.

To find the circumference of a Circle from the diameter—Multiply the diameter by 22 and divide by 7—or to be more exact, multiply the the diameter by the shortest; then multiply the products by the decimal 7854.

To find the contents of a Pyramid or Cone—Find the area of the base, and multiply that area by the perpendicular height, and take one third of the product for the contents.

To find solidity of a Sphere or Globe—Multiply the surface by the diameter, and take one-sixth of the product for the contents.

To find the weight of Wrought-Iron—Find the number of cubic inches in the piece, and multiply by 2816, the weight of one cubic inch; the product is the weight in pounds.

To find the weight of Cast-Iron—Find as above and multiply by .2607.

To find the weight of Copper—Find as above and multiply by 32118; product is weight in pounds.

To find the weight of Lead—Find as above and multiply by 51015; product is weight in pounds.

To find the weight of Brass—Find the number of cubic inches, multiply by 3112; product is the weight in pounds.

To find the strength in Ropes—Multiply the square of the circumference in inches by 200; it will give the weight the rope will bear in pounds.

To find the strength of Cables—Multiply the square of the circumference in inches by 120, the product is the weight the cable will bear in pounds.

To find the strength of a Chain—As many $\frac{1}{3}$ of an inch as the chain is in diameter, take $\frac{1}{3}$ of this sum and multiply by the other half; the product is the weight in tons it will bear.

To find the length of iron to form a Hoop or Band—Add once the thickness of the iron t diameter of the hoop, and multiply by 22;-d by 7 gives the length.

To find the size of Nuts for Bolts—Th should be twice the diameter of the bolt in bre and once the diameter in thickness.

To measure stone for building—Multip length by the width, and that by the thic and divide by 24.75, which gives the p in it.

To measure Stone in a Well—Measur well in the clear, and add the thickness o wall, then find circumference, which is the of the wall, and divide by 24.75.

To measure Grain in a Bin—Multip length of the bin by the width, and that b depth; this gives the cubical feet in a bush

To measure Corn in a Crib.—Multip length and breadth of the house together, an by the depth, which will give the cubic fe vide the last product by 12 which will gi barrels of shelled corn in the crib, 5 bushe barrel.

To find the cubic feet in a Grindsto the whole diameter add half said diamet multiply by the same half, and this prod the thickness, and divide by 1728, the num cubic inches in a foot.

To find the cubic measure of hewn —Multiply the breadth *in inches*, and that thickness *in inches*, and that by the length *Note.*—Square measure has 144 inches square foot, cubic measure has 1728 inches cubical foot.

To find the number of gallons in a cis reservoir—Find the number of cubical fe multiply by 7½ for the gallons.

A cubic foot of water weighs 62-5 lbs. are 230 cubic inches in a gallon of water.

Morocco Dressing in Brooklyn.—The says: "There was a time, and that not ve past, when French Morocco, so indispens well as becoming for ladies' wear, could had by importation. Now, however,— to native enterprize—if not veritable Morocco, that at least which is dressed same fashion, and with all the beauty an of the best foreign article, is furnished abu at our own door. An establishment of th and the largest in our vicinity, if not in th try, is that of Messrs. Chambers & Bac

wanus, (Brooklyn.) The manufacture last r amounted to $60,000, and will be consid- bly increased the present. Forty-five hands e constantly employed in the various processes preparing the skins, dressing, tanning, coloring, ishing, &c., all of which are done under one f. or in one building closely connected. It is n goat skins the best Morocco is made, and h only are used in this establishment. These as are all imported, as are also most of the icles employed in tanning and coloring. The ive Sumach is used to some extent in tanning, it is said to possess much less strength and acy than that which is obtained from abroad. ight doubtless, however, be improved in its ity by cultivation; and the inquiry would per- s be both important and profitable, whether e are other foreign materials used in this and manufactories generally, which might be ad- tageously superseded by those of our own rth or production.—*N. Y. Far. & Mech.*

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omposition for Shoes.—Two parts of tar, two eef's tallow, and one of bees-wax, make a d composition for boots and shoes. Apply it warm, and warm the leather that it may rate. As farmers are frequently exposed to they should be careful to keep their feet dry warm, for on this their health and comfort great measure depend. There are various positions that are good to resist water and erve leather, and the proportion of the above be varied. Tar and tallow will answer ; so will tallow and beeswax.

YOUNG MEN'S DEPARTMENT.

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

Depend on yourself—The editor of the *Albany Knickerbocker* is a sensible man. There is more truth than poetry in the following, which we copy from his spicy paper:—

"Bad luck, as well as mischance and misfortune, are all the daughters of misconduct, and sometimes the mother of success, prosperity and advancement. To be thrown on one's resources, is to be cast into the very lap of fortune. Had Franklin entered Philadelphia with a thousand dollars in his pocket, instead of one shilling and nine pence, as he did, in all probability he would have gone on a "spree" instead of hunting up employment, and died at thirty-five from driving tandem teams and drinking brandy smashers, instead of living to the green old age of eighty, and dying a philosopher, whose amusement was the taming of the thunderbolts and bottling up lightning. Had Napoleon's father been the owner of a princely estate, his son would have never got to be emperor. A good kick out of doors is better than all the rich uncles in the world. One never tries to swim so hard as when he has to do it or drown:—To be a rich man's son, is the greatest misfortune that can befal a young man, mentally speaking.—Who fill our offices? not the children of the rich or the sons of the opulent."

Be Steady.—"*A rolling stone gathers no moss.*"—This maxim figuratively and fully illus-

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To cook Tomatoes.—He that does not love tomatoes is an object of pity. Every art of cooking should be employed to inveigle the appetite of every man to love a vegetable so wholesome.

Peel a dozen ripe tomatoes and fry them in a little sweet butter, together with two or three sliced green peppers, sprinkle on a little salt, and finally stir up an onion or two, and let the whole cook thoroughly. This is the Spanish method of preparing them.

Another method, which, from long experience, we know will wear well, is as follows:—The directions are for a mess of tomatoes, amounting to about three pints when cooked.—Begin by parboiling two onions. While this is doing, peel a dozen tomatoes, which is easily done after hot water has been poured over them, cut them up and add the onions, also a teacupful and a half of bread crumbled fine, a table spoonful of salt, a heaped teaspoonful of black pepper, a lump of butter of the size of a turkey's egg, or about four table spoonsful. Beat these thoroughly together and set them over a slow fire, gradually to stew. *They should cook slowly for a long time;* never less than three hours, but the longer the better. About fifteen minutes before they are to be used, beat up six eggs and stir them in, and put them on fresh coals and give them one grand boil up, stirring them all the time. When so cooked no directions will be needed how to eat them.

The art of cooking the tomatoes lies mostly in cooking them enough. They should be put to work the first thing after the breakfast things are out of the way: even if you do not dine till three.—*Indiana Farmer and Gardener.*

Blackberry Syrup.—The following is the recipe for making the famous Blackberry Syrup. No family should be without it; all who try it will find it a sovereign remedy for bowel complaints: "To two quarts of blackberry juice, add half an ounce *each* of powdered nutmeg, cinnamon and allspice, and a quarter of an ounce of powdered cloves. Boil these together to get the strength of the spices, and to preserve the berry juice. While hot, add a pint of fourth proof French Brandy, and sweeten with loaf sugar. Give a child two teaspoonsful three times a day, and if the disorder is not checked, add to the quantity."—*Ib.*

System, Order, Regularity.—The importance of attending to these points must be apparent to every one who has had any experience in managing a household, and who has the important and indispensable talent of observing. Supposing then my young friends to be early risers, your attention should be next directed towards having a system and a regular time for everything you do. "There's a time to work, a time to sing, a time to play," &c. According to your own desires, necessities or tastes, have your moments or hours set apart, and when once fixed, adhere to them, and make every other thing about the house adapt themselves accordingly. In this way you will soon have united and harmonious action, and everything will go on like "clock work." You know always where to find yourself and every one else will know where to find you, and place their dependance and make their calculations accordingly. This is supposing that you are the head of an establishment, for there must always be a head to a body, But if you are not at the head, you can regulate according to that head, and if there is system about it, you are as much the governors of your time as if you were the main regulator. If there is not system about it, I pity you from my heart, you are a slave indeed, and must have the patience of Job and the meekness of a lamb, if your temper is not ruffled. From all the scourges and distempers incident to the ills of human life, God save me from the fictions and disturbances of an irregular household. Behold the beautiful, grand and incomprehensible system of all nature, the sublime regularity of the heavenly universe, watch the harmony of system, and the beauty & regularity displayed by the Divine Regulator, and who will deny that we have not there set an unmistaken example, for us to follow.

Your friend,

AMELIA.

—*Missouri Farmer.*

Hoe Cake.—Three table spoonsful of sugar, three of cream, three eggs, one teacup of buttermilk. Stir in the meal till it is a little thicker than batter, and salt and spice to your liking.

Corn Muffins.—Take one quart of buttermilk, three or four eggs well beaten, a small quantity of flour, mix them together and then make it quite thick with corn meal, and a table spoonful of melted butter, and salt to suit the taste; butter the pan in which it is baked.

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