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Vol 1 No 1 Robert Baynes Esq  
Editor

THE

# NEW-BRUNSWICK AGRICULTURIST.

MAY, 1841.

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THE

## NEW-BRUNSWICK AGRICULTURIST.

SAINT JOHN, MAY, 1841.

No. 1.

Vol. 1.

### PREFACE.

THE Directors of the AGRICULTURAL AND HORTICULTURAL SOCIETY, OF THE COUNTY OF SAINT JOHN, feeling confident that the publication of a Monthly Periodical, devoted exclusively to Agricultural, Horticultural, and Botanical knowledge, would improve and advance the interests of Agriculture in this Province, have determined to promote this desirable object, not only by an appropriation of part of their funds towards it, but also by an appeal to the several Agricultural Societies throughout the country, and to the Agriculturists generally throughout this Province and Nova-Scotia, for patronage and support.

The Directors of the Saint John Agricultural and Horticultural Society have expressed their "sincere regret" that their application to the Legislature for pecuniary assistance, in furtherance of this object, was negatived in the Legislative Council, after a vote of £150 had passed the House of Representatives. But, notwithstanding this rejection of their petition, the Directors have voted the half of their small funds to assist in the immediate establishment of a periodical to be called "THE NEW-BRUNSWICK AGRICULTURIST," which will be edited by Doctor BAYARD.

This Periodical will contain all the interesting local matter obtainable in these provinces; together with suitable extracts from the latest and most approved Agricultural works in Great Britain and the United States; and every effort will be made to secure useful information.

As the success of this experimental periodical, which will contain matter interesting not only to the agriculturist, but to the general reader, will depend upon the public support which it may receive, the Editor solicits the patronage of the Agricultural Societies throughout New-Brunswick and Nova-Scotia, and of the friends of agriculture generally.

It is the opinion of the Directors of the Saint John Agricultural and Horticultural Society, that the *gratuitous* distribution of a limited number of copies of Agricultural Magazines among indigent settlers is advisable, that information may thus be diffused more generally throughout the country; and it need scarcely be observed, that the appropriation of funds to the diffusion of such information, is the best premium that Societies can award for the advancement of Agriculture.

"THE NEW-BRUNSWICK AGRICULTURIST," will comprise 24 pages—octavo—neatly printed on good paper, at the moderate price of FIVE SHILLINGS annually—payable in advance—and published the first week in every month. And if it should receive encouraging circulation sufficient to warrant any increase in its size, each monthly number shall contain from 32 to 48 pages.

The Editor of The New-Brunswick Agriculturist has read with much pleasure the announcement of Agricultural Periodicals in Nova-Scotia, and he sincerely hopes that the zeal and abilities of their enterprising editors will excite corresponding efforts in

those for whom their exertions are made. The New-Brunswick Agriculturist enters the field not as an opponent, but as a fellow-labourer in the common cause; and as the respective periodicals are published at a very reduced price, and within the reach of every farmer, it is hoped that every farmer will encourage and support these simultaneous undertakings, as each of them will contribute to his scientific and practical knowledge. Our provinces have long wanted such efforts in behalf of the agriculturist; and it is to be regretted that the spirit which was kindled by the laudable efforts of the talented friend of Agriculture, the late and lamented JOHN YOUNG, Esq., of Halifax, so soon subsided. The example was worthy of a better following, and the cause of Agriculture in our provinces of a more enduring zeal.

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#### INTRODUCTION.

IN commencing an agricultural paper, intended for circulation in these provinces, the following questions naturally suggest themselves.

Are the provinces of New-Brunswick and Nova-Scotia favourable for agricultural pursuits? What advantages do they possess, and what are the disadvantages which attend them?

Do the objections which have been urged against them originate in the errors of the objectors, or in the severities of the climate, and the incapacibilities of the soil?

What is the present state of agriculture in these provinces?

And in what particulars does it require improvement, and what improvements are most applicable to it?

These are interesting questions, and a full reply to them would involve enquiries and discussions too extensive for the limits of a paper, but we shall endeavour to furnish some general answers, sufficient to prove that our provinces do possess great agricultural capabilities—that the objections, which have been advanced, are in many instan-

ces and respects, without foundation—that the capabilities of the soil are great, that the climate, although severe, is sufficient for the growth and ripening of many of the agricultural necessities and luxuries of life; and that those, who complain of the shortness of the summers, and the length and severity of the winters ought to examine and correct their own defective systems, characterized by a want of economy in time, and of convenience in the implements of husbandry, and in rural arrangements, which shorten a short season, and which, if improved would reduce the labour of the husbandman, and remove many of his complaints about the hurry of work.

The provinces of New-Brunswick and Nova-Scotia can boast of every variety of soil from the light sand of the plains, to the rich and inexhaustible alluvial of our marshes. The tops of our mountains—their sloping sides—the fertile soil at the bases of them, and other arable lands, which are terminated either by fresh water intervals or productive dyke lands and salt marshes, unitedly form a whole, which only requires the judgement and industry of enlightened agriculturists, to bring into successful operation. As different soils are fitted to different vegetable growths; the science of agriculture must point out the adaptation of the seed to the proper soil, in order to ensure successful cultivation. Inattention to the fitness of the soil and seed is a frequent cause of failure, for it is a well established fact, that the properties of a plant will oftentimes vary according to the peculiarity of the soil, which nourishes it. We have a familiar illustration of this influence of soil, in the growth of our potatoe; the same seed will in one soil produce a dry and mealy potatoe, and in another, a waxy, disagreeable and watery vegetable. This adaptation is of the utmost importance; and the neglect of it not only gives rise to disappointment, but also to complaints against the seed, the season or the soil, which are exclusively referrible to the ignorance of the husbandman. Providence has wisely ordered that particular plants should flour-

ish in particular soils, and in proportion to the variety of these soils, if we study the nature and uses of them, will be the variety of the fruits of the earth. The arid sands of Aylesford in Nova-Scotia have been denounced for their barrenness, but the luxuriant and tall pines, which spring from them, furnish proof that they possess certain properties favourable to the growth and nutrition of this particular species of tree. The marshes and intervals of these provinces proclaim their capabilities as grazing and grass countries;—and if productiveness in this respect, remarkable as well for the quality as the quantity of the grass, is any argument in favour of our agricultural capabilities, then do our provinces possess them in an eminent degree. It has been said that the wheat crop is uncertain in these provinces, and that the climate and season are unfavourable to the growth of it.—It must be confessed that our springs are late, but we have seen extensive fields of wheat, abundant in quantity and excellent in quality, growing in every part of the country; and the climate and season that would mature one field of wheat, would ripen (all other things being equal) any number of them.

We are inclined to attribute some of the failures in this crop to the error of the farmer, in the choice of his seed, the selection and preparation of his ground, and the time of his sowing it. The interior of New-Brunswick abounds with soil of the very best quality; and many of the uplands in Nova-Scotia, and its dyked lands in particular have given the most undeniable evidences of their capabilities for wheat crops. But although some people may assert that our climate and season render these provinces unfit for the cultivation of wheat, they must confess that they yield abundant crops of oats and potatoes of the very best qualities. The occasional success in the cultivation of Indian corn—the growth of barley and rye, and the produce of the orchard and garden in New-Brunswick and Nova-Scotia, furnish a satisfactory answer in favour of their agricultural capabilities. It is true that

our winters are severe, and that in return for the labour of the ox, the farmer must sweat in the hay field, and toil through a tedious winter in the service of his cattle. But we shall in a future enquiry endeavour to ascertain, whether a portion of the time, which is now devoted to the raising and keeping of horned cattle, might not be more productively applied to other agricultural pursuits; for a large stock of cattle in these provinces implies a large farm: and a large farm, too generally speaking, implies some hundreds of acres of ground, badly fenced and carelessly cultivated, with a vast disproportion between the labour expended, and the labour required. This is a system, which works badly for the country, and worse for the proprietor, and creates the outcry, that wages and workmen eat up the farm. This complaint, is attributable to mis-management; for industry, judiciously directed and purchased at a reasonable rate, is gain.—This subject however, merits particular consideration, and shall in a future number receive the attention, which it demands.

The advantages and disadvantages of a country as respects its agriculture, refer to the circumstances of climate and soil—to the facilities of marketing—the prices of produce, and to the consequent profits of the agriculturist. We have already made some general remarks about climate and soil. The soil of our provinces generally speaking, is excellent, but the shortness of the spring, summer, and autumn, crowds the labour of these respective seasons in rapid succession upon the farmer, which is the principal disadvantage incident to our agriculture; and therefore, if science and the experience of more enlightened countries can suggest any management or machinery, calculated to facilitate labour, and thereby to enable the husbandman to fulfil the duties of each season within its proper time, and to increase and extend his exertions, it would be an improvement of the utmost consequence to the provinces. When we bear in mind,

the saving of time and labour which has been effected by machinery and management, in various departments of agriculture, and in other pursuits of life, we may reasonably indulge the hope that similar success may attend, similar efforts in this particular object; and science, societies, and agricultural papers, in these provinces, cannot direct attention to a more important subject of consideration, than to the improvement of machinery and management for spring work.

[To be continued.]



#### WASTE OF MANURE.

MANY difficulties, arising from the circumstances of the farmer and the state of his farm, have opposed the progress of agriculture in these Provinces; but there are many erroneous practices, unconnected with those difficulties, which require correction. The attention of a stranger passing through our provinces, and possessing any agricultural discernment, is arrested by the condition of our barn yards, the waste of manure, and the want of compost heaps in or near them. Before we quote authorities upon the subject of manures, we shall point out some of the errors which prevail so generally throughout our provinces, in this important department of husbandry.

The manure collected during the winter is thrown into a heap in the open air, adjoining the stable, for convenience. Much of its substance is washed away by the fall and winter rains; and it is mingled, layer after layer, with snow collected in successive storms.—The loss of useful property, which it sustains by these frequent washings, will be shewn, when we speak of the making and management of composts; and, moreover, the labourer has increased work in breaking up the frozen masses in the spring; and when his cart is loaded, a large proportion of the load consists of snow and ice.

This error, which is an evil of serious magnitude in rural economy, is easily remedied by building a shed or lintel, for the reception and protection

of the manure, so constructed, and facing the south, that when the doors are opened in the spring, the manure might be easily removed.

We may here advert to another very objectionable practice with many of our farmers, namely, the yarding of cattle—if we can call it yarding—in the high-ways, which endangers not only the life of the passenger, and the limbs of the animal, but occasions a serious loss to the farmer. In the first place, a loss of manure, if he neglects to collect it, which is generally the case; and in the second place, a loss of time in the collection of it, if he sees the necessity of gathering it. Fresh manure, when carted to the field in the fall of the year, and deposited in small heaps throughout it, is liable to waste. When scattered in this state over the field, it does not undergo that chemical change in its nature, which experience has found to be so beneficial for vegetation. We are ignorant of the real nature of this change, but we know the fact, that after the process of fermentation, the properties of the compost are improved. The fresh manure scattered over the fields, or deposited in heaps, is so frequently washed by the rains, that there is little left excepting the straw. It has been argued in reply to this objection, that the virtue thus washed out, has been washed into the surrounding soil. But it should be known, and remembered in the first place, that the substance thus removed, not having undergone fermentation, is not so nutritious to the soil, as a similar quantity of wash from a proper compost, fit for use; and in the second place, that the frequent rains, either run it from the surface, if the ground is frozen, or the field be situated on the side of a hill; or, if the earth is soft and porous, that the virtue of the manure sinks downwards unnecessarily and unprofitably deep. The acrimonious property of fresh manure is displayed in the droppings of cattle upon pasture and meadow lands, where the grass beneath such droppings is completely scalded and destroyed.

A similar waste is observable in those

barn-yards where the barn is erected on the side of a hill. The manure thrown out upon the lower surface, whereby the moisture, independent of the increased discharge of it by rain, flows in a stream down the hill. This very defective arrangement prevails throughout the farms, with very few exceptions, bordering upon the Saint John, the Kennebec-kasis, and Hammond rivers, which receive this wash from the stables. It is true that the hills are steep; but it is equally true, that a little arrangement would save not only the quantity of the manure, but greatly improve the quality of it. The moss-covered surfaces of many of the grass fields in the neighbourhood of such wastes, bear witness against the un-farmer-like inattention of their owners.

While speaking of the waste connected with the use of fresh manure deposited and scattered over the field in the manner already mentioned, we may advert to another evil, arising from it.

The manure thus used, is loaded with various seeds, which produce an abundance of weeds and grasses, absorbing the nourishment of the manure and soil from the crop, injuring the growth of it, and requiring additional labour and time to root them out. This fact every farmer must have witnessed in the comparative states of a row or field of potatoes planted with fresh manure, and of another field planted with manure from a proper compost, and free from such incumbrances. In the former case, it is oftentimes a difficult matter for the husbandman to discover and separate the crop from the surrounding weeds.

Although the philosophical agriculturist cannot define the precise nature of the change which is effected on fresh manure by fermentation, whereby it acquires new properties capable of promoting the process of vegetation, it is nevertheless a well established fact, that the gases, which are disengaged during decomposition, fertilize the soil by which they are absorbed. This fact has been, and is easily ascertained, by a simple experiment, viz: covering a compost

during fermentation with sterile earth; the vapour which ascends from the fermenting manure is absorbed by this soil, which, without any admixture with the other substance of the compost, is enriched and rendered productive by it. The earth possesses this absorbent property in a remarkable degree; hence very little odour arises from fresh manure when scattered over a field, or from a putrescent animal body, when slightly covered with soil. The farmer should be aware of this important fact: for it is a common practice to heap stable manure in large quantities, without any earthy covering; it heats these fertilizing gases or vapours escape from the smoking mass, and are dissipated and lost; whereas a covering of earth would prevent it, and thus materially increase the ability of the agriculturist to enrich his fields.

#### ARRANGEMENT OF BARN YARDS.

The same indifference and inattention, which, it must be confessed, characterise the proceedings of too many of our farmers with respect to their manure, are observable in the arrangements of their barn-yards, which are equally deficient in fitness and economy. Every barn-yard in our cold provinces, should be surrounded with a close fence, to exclude the cold winds. A roof should be attached to it, sloping so as to throw the rain from the yard. Beneath this shed, there should be a manger for the fodder of the cattle. This arrangement would protect them from severe exposure in winter, and prevent the waste of hay, which generally follows the slovenly practice of scattering it over the barn-yard; where, in stormy weather, part is eaten, part covered up, and part trodden under foot by the cattle, and destroyed. The barn-yard should have divisions in it for horses, horned cattle, and sheep, with sheds and mangers, or racks, as already mentioned. This separation would prevent the frequent accidents which occur from kicking and hooking, as it is no uncommon occurrence to hear of a valuable horse gored

and ruined by the cattle; or some cow, in return, injured by a horse, or sheep killed by both.

The inability to procure or purchase boards is no excuse, for the want of such a convenience; for a close picket fence, with a pole roof, covered with bark, or spruce boughs, or straw, would answer the purpose; and these means are within the reach of every cottager. Humanity, as well as the interest and advantage of the farmer should urge him to adopt this simple and useful arrangement, which would also add to his own comfort, during his winter labour in the barn and barn-yard.

#### MANURE AND COMPOSTS.

A farm without manure is like a willing horse without any food. You may work it for a while, but it soon becomes weak and exhausted; therefore the possession and preparation of this necessary article, is a matter of primary importance for success in agriculture.

This being the case, we shall now proceed to notice the various kinds of substances used as manures; and shall then quote from the best authorities, the appropriate applications of them.

The term *manure*, is applicable to any substance, scattered over the surface of the ground, to alter, improve, and fertilize the quality of the soil. Hence, the different soils, when applied to others of a different nature, are considered in such cases as manures; and gravel itself becomes one, when used to lessen the closeness and tenacity of clays.

Manures are made of various substances, and are either of an animal, or vegetable, or fossil nature. The decomposition of vegetable or animal matter forms a manure calculated to nourish and feed the plant. Fossil manures, such as lime, clay, marl, gypsum, sand, and gravel, operate more upon the soil; although, as calcareous matter enters into the composition of many vegetable productions, it is reasonable to conclude, that lime not only improves the soil, but that in many cases, it contributes directly to the support of the vegetable.

"The animal and vegetable manures, which are putrescent in their natures, are foremost in importance," and it is requisite that putrefaction should take place, for, "if the animal or vegetable substance do not putrefy or decay, it is of no more use in the ground than a stone." In this process, the elementary principles of the substance are disengaged, and escape either in a fluid or volatile state; and it is of the utmost importance, that the virtue of these principles should be preserved, as we have already mentioned, by securing the retention and absorption of them by coverings of soil on the compost. These coverings may be from 12 to 18 inches in thickness. "There is no principle connected with agriculture," says Mr. JACKSON, a scientific agricultural writer in Scotland, "so little understood or thought of, as that which has been now mentioned. Generally speaking, the excrementitious matters thrown to the dung-hill, are treated with perfect indifference, as to the effects of exposure and drainage away in the form of liquids. It cannot be too strongly stated, that this is a gross abuse in farming, which cannot be too speedily remedied. The putrescent stream contains the very essence of the manure, and should either be scrupulously confined within the limits of the dung-hill, or conveyed to fresh vegetable or earthy matter, that it may impart its nutritive qualities." This shews the necessity of selecting a proper place for a compost heap for the reception of these fluids. Some agriculturists recommend digging a pit for the purpose, and lining it with planks, stones, or clay. We would suggest to the consideration of our farmers, the advantages that would be derived from digging such a pit, about 18 inches deep, along the rear of their stables, for the reception of manure, into which the urine from the stables might be easily conducted. This pit should be floored and walled with timber, and the seams secured with clay; and if over the whole, a lintel, as already advised, was built, the farmer would soon reap the benefit of his trouble and trifling ex-

pence, in the increased productiveness of his farm.

[To be continued.]

An ADDRESS, delivered at the Formation of the "Agricultural and Horticultural Society of the County of Saint John," by R. BAYARD, M. D., &c.

GENTLEMEN,

I HAVE taken a prominent character in the proceedings of this evening, in compliance with a wish expressed at a meeting of gentlemen upon a former occasion, through whose instrumentality we are now assembled, for the purpose of organizing a County Agricultural and Horticultural Society, and I most cheerfully comply with that request, not from any confidence in my own ability to do it justice, but from a willingness to contribute my best exertions towards the accomplishment of an object, which interests every member of society as well in the varied occupations of the city, as in the quiet pursuits of the country; for notwithstanding the diversified sources of national wealth, still it must be acknowledged, that agriculture is the basis of permanent national prosperity, and that it is worthy of universal support and patronage.

It is a science, which presents an extensive field of enquiry to the practical farmer, and to the speculative philosopher, and whilst it teaches the one to regulate his proceedings, by that fitness of things, most conducive to his own advantage, it leads the other to contemplate the wonderful economy of nature, and to examine those laws, which, when obeyed by the husbandman, ease, and reward his labours. Agriculture from its antiquity and usefulness, is entitled to precedence among the arts; and during the Roman ages, it engaged the attention of the most exalted characters, when released from the pressure of public business. But as a detail of its history would be an encroachment upon your time and attention this evening; I shall briefly observe that the study of it has been pursued by the most eminent philosophers of modern times, who have

enriched the science with their valuable discoveries, which in Great Britain, have made that country the excellent school for the instruction of others.

When we compare the state of agriculture in this province, with that of Great Britain and of our western neighbours, and when we take into consideration the length of time that has elapsed, since the first settlement of the country, and the facilities of intercourse with England and the United States, we must confess that there are deficiencies and inferiorities, which cannot be satisfactorily referred to the indigence of the people, or to the unfavourableness of the climate; as a want of system is observable in many instances upon the lands of farmers in easy and comparatively opulent circumstances. I am aware that our fathers had to encounter many difficulties immediately after their arrival in these provinces; weary with their unsuccessful resistance to the revolutionary principles, which ultimately overpowered them in the revolted states, they gladly left the green fields of their once happy homes to seek an asylum for the standard of their King; under which they might enjoy the blessings and privileges of the British constitution, and of British monarchy, that best and noblest form of government, uncontaminated by the breath and atmosphere of republicanism and democracy: and, gentlemen, if in their pilgrimage of loyalty they did not find a land bearing the luxuriant vine and olive tree, they have left us a country, rich with natural advantages and resources and only requiring the industry and perseverance of their descendants and followers, to bring into great and successful operation. If we are not blest with all of the productions of a tropical region; we are not cursed with all of the diseases peculiar to a tropical climate. And if we do not enjoy the lengthened summers of our more western neighbours; we do not shake with their lengthened agues, whose chills, even beneath a scorching sun, are more mischievous and insufferable than the chills of our northern blasts.

But, gentlemen, we have a fine province, abounding with every variety of soil, suitable by proper cultivation for various vegetable growths. The country is intersected with numerous tributary streams, flowing into large rivers, which lead to the principal market towns—the population is rapidly increasing—the tide of immigration is rolling its welcome thousands annually to our shores—the forest is falling beneath the axe of the industrious settler—and the gloom of the wilderness is relieved by his dwelling. I may here observe, confirmatory of my assertion, that I was called upon professionally to visit a family, who had just arrived in this City from the Ohio. I found the husband, his wife and two children exceedingly exhausted with intermittent fever, which they had contracted in that country.—The father informed me that he had sold a good property in this province at a reduced price for the sake of emigrating to the westward—that he removed at a heavy expence, and after a tedious journey, arrived at his imaginary paradise—that he was soon after seized with fever, which reduced his strength and pecuniary means; that a short residence convinced him of his error, and again selling the farm which he had purchased in the Ohio at a loss, he was determined to return to his native province; he returned a bankrupt in health and purse, and confessed that he was now satisfied that health and New-Brunswick were preferable to the Ohio and its fevers.

I know several farmers both in Nova-Scotia and New-Brunswick, who left these provinces in pursuit of a more desirable country, and who after an absence of one or more years, returned to them again, confessing, that notwithstanding the disadvantages of climate, they felt healthier and happier in them. Several repurchased their former farms, giving a greater price than they received for the sale of them, and they candidly declared that they did not regret the loss, as they were now convinced of their value, satisfied with their situation, and cured of their roaming pro-

pensity and eagerness for change, which the bright descriptions of other places had created.

The principal avenues to our city are crowded with teams, bearing the produce of the country; and paths which a few years back were seldom marked with the footsteps of a passenger, are now frequented roads,—our city is increasing in opulence and dimensions,—its commerce is swelling its mercantile marine to a magnitude unprecedented in the British Colonies—we enjoy an enviable connexion with Great Britain; a connexion, which our forefathers appreciated, when they surrendered every thing, *but their loyalty* for the enjoyment of it; and suffered *every privation* excepting that of their *principles*, to rest beneath the palladium of their happiness, the *flag* of their country, that emblem of union and strength, which I trust will wave for ever over our provinces; the noblest monument that can be reared over the graves of those determined loyalists, who sleep beneath the green-sward, and our Talisman in the hour of necessity, which when unfurled, speaks the language of the immortal Nelson—"That England expects every man to do his duty," A call which has been answered with devotion by the sons of New-Brunswick and Nova-Scotia, in Canada, upon the Ocean, in India, throughout the ensanguined continent of Europe, and upon the ever memorable field of Waterloo.

We are protected by the power of the mother country; encouraged by her protection, and governed by a representative of majesty, our zealous Lieutenant Governor Sir John Harvey, who has always manifested the sincerest desire to promote the prosperity of this province, and the happiness of its people; and here let me pay the tribute of respect due to his forbearance, which has thus far perpetuated the blessings of peace, and preserved our country from the desolation and ruin of a border war, ruinous alike to agriculture and mercantile interests.

I have said that agriculture is a science, and that it must be pursued upon

scientific principles. Our young farmers must be instructed in the rudiments of that science, and our old men must be contented to receive the measure of information within their reach.

Quackery in agriculture is a noxious weed; nor does the ivy, which insinuates its destructive tendrils into the sturdy oak, retard and injure its growth more effectually, than does the adherence to erroneous prejudices and practices handed down from father to son, like the nostrums of Empirics, retard the improvement of agriculture. In confirmation of this remark, as applied to our own province, I need only refer to the barn yards of many of our farmers, in which a compost heap would be a labour of kindness—to the barn doors, against which some massive timber presses and performs the humble office of a latch—to ploughs and harrows wintered in the ploughed field, exposed to the rotting vicissitudes of the weather—to the scattered implements of husbandry found every where, but in their proper places;—to the little patches of cultivated ground surrounded by bushes and brambles, which had escaped the teeth of half-starved cattle in the winter, and enclosed by a crazy Virginian fence, serpentine around the field and inviting, rather than opposing the intrusion of cattle;—to fields, in which potatoes were committed to the earth, with no other manure, than the hope of the husbandman, that Providence would give them a miraculous increase; and to the seeds of weeds scattered over the ground, as if the earth was not sufficiently cursed with them already.

There are however, some exceptions to this reference, but not sufficient to establish the opposite, as the prevailing state of things.

There is a charm in rural life which exercises a powerful influence upon the imagination and recollection, and strengthens that love of country which poets and patriots have eulogised. It is true that these feelings of attachment do not originate exclusively from scenes of grandeur and richness, for the child that

draws nourishment from the bosom of a mother, whom nature has not indulged with personal beauties, sees attractions in the benevolent smile which illuminates her *unfavoured features*, and can love with *intense affection*;—the wild beauties of Switzerland have their invincible charms for the hearts of its peasantry, the heather of the hill exercises its magic influence over the feelings and affections of the Highlander.—“In Ireland the fertility of her soil,” says an elegant writer, “the majesty of her mountains—the luxuriance of her vallies, and the loveliness of her lakes, which make them rivals to those in which Italian skies glass their deep azure,” inspires an Irishman with chivalry and romantic devotion to his country; and New-Brunswick and Nova-Scotia, which are not deficient in scenes of natural beauty excite their kindred emotions, and receive the tribute of attachment from their children.

As a provincialist by birth, education and attachment, I proudly confess that I love my native province with all its roughnesses and imperfections, and that I remember with feelings, such as hallow early reminiscences, the scenes and days of my boyhood. But, Gentlemen, when cultivation and the aids and appliances of art improve the natural appearances of a country,—it is then, that the neat cottage, the orchard, the garden, the lawn, the old oak tree, the graceful elm, the rose-bush, and fragrant honey-suckle that creeps upon the cottage for protection and support increase those feelings which inspired the Bard of Scotland, when he asked

“Breathes there the man with soul so dead,  
Who never to himself hath said,  
This is my own, my native land?”

And the sweet hawthorns of England, the enchanting beauties of its cultivated scenes, and its flower-clad cottages, more than the grandeur of its magnificent palaces, touch the feelings of an Englishman, and induce the wanderer to exclaim, in the language of his poet,

“Where'er I go, whatever realms I see,  
My heart untravell'd fondly turns to thee,  
Still to my country turns!”

It must be confessed that there is a great want of neatness in our rural economy if we can apply that term to our agricultural system—an American colonist seems to have an antipathy to trees, and to have waged a war of extermination against them. Our cottage economy comprises a house built something like a packing box, with a horse shed and stable on one side, and a pig-pen and wood pile on the other, the intervening space of ground being common property for pigs, cattle, and geese, which all in turn dispute possession of the threshold. A garden, generally speaking, is considered superfluous, for the field affords potatoes, and a small patch behind the barn furnishes its cabbages and cucumbers; as for trees, the forest supplies a sufficiency, cut up in in cord wood lengths beside the door, the lily pond, flower garden, and the lawn will be found in the meadow.

These censures apply particularly to the farms of those persons, who have had the means and time to attend to the ornamental, united with useful husbandry; for I am aware that the settler upon new lands, those pioneers of the forests with no other patrimony but their hands and a determined resolution, must spend and be spent in hewing down the wilderness, and clearing away the stumps for the benefit of their successors.

A variety of causes have retarded the improvement of agriculture in this province, and among them I may mention the unfortunate combination of character viz: the farmer and the lumberer. SMITH, in his *Wealth of Nations*, has observed that the division of labour is the perfection of work—implying that each operative pursues his peculiar and distinct vocation. This division is found advantageous in other manufactures: and of how much importance must it be in the manufacture of a farm. I am inclined to consider this union of incompatibles, viz. the farmer and the lumberer as one great cause of the prevailing neglect, which characterizes the agricultural appearance of the province, and I believe I am not speaking without authority, when I assert that the

pursuit of two occupations, so entirely at variance, has produced the *division* of the farm to satisfy the demands of mercantile creditors for agricultural supplies. The introduction of immigrant labourers, and the consignment of this department of industry to persons unconnected with agriculture, is the only remedy for this great evil.

Another cause militating against the prosperity of agriculture, may be found in the mistaken prejudice of too many of those young men, who desert their paternal farms for the delusive attractions of the city, and who consider mercantile and professional pursuits, more worthy than those of agriculture; but they are wrong—agriculture is a science—and the man who pursues it as such, and conducts himself with industry and propriety, may be proud of his rank and standing in the community; he is worthy of respect, and he will always command and receive it. Time and trial—failure behind the counter, and “nothing to do” in the professions will convince such adventurers, that a snug farm supplying the comforts, and many of the luxuries of life ensures a happier state of existence, than the artificial appearances of a town, with the real annoyances of *dishonoured notices*, and the whisperings of failures, that may possibly involve themselves in the ruin. If a statement of the failures of professional and mercantile men, contrasted with the instances of success were compared with a similar statement of the failure and success of persons devoted to agriculture, the inference would be in favour of the latter, and I doubt not, that such an exposition would have an influence decidedly beneficial to the cause of agriculture.

In justice to the agricultural capabilities of our provinces, I must vindicate them from the detractions of some, who have written with more acrimony than candour, and of others who have manifested more ignorance than geographical knowledge,—our forests have been compared to brambles, and our productive meadows, some of them not surpassed by the celebrated Carse of Gowry

in Scotland, to sand banks. Cobbett has compared our soils to the barren deserts of Arabia, and his Icelandic descriptions of our climate would terrify a Russian boor. Such slanders are refuted by a statement of the vegetable productions of our provinces, viz: every variety of apples, pears, plums and cherries, abounding in quantity, and excellent in quality, especially in Nova Scotia, where the grape is cultivated even in the open air with comparative success—the peach and green flesh musk melon are matured in similar exposures—and I question, if Cobbett, even in his favoured Hampshire, could have raised the Indian corn equal to the growth of it in either of our provinces. Our dyke lands soon after they are reclaimed from the waters, yield without the aids of composts, burdens of grass equal to the most cultivated meadows of England. And I have seen in Nova-Scotia upon the dyke lands of Horton and Cornwallis, hundreds of acres in contiguous fields bearing a luxuriant harvest of excellent wheat. It is unnecessary to particularise other productions; the examples which have been already adduced are sufficient to assert the capabilities of the climate and soil. Our provinces are well calculated to attract the attention of industrious immigrants; we have a healthy climate, a rich and productive soil—and the fruits of the earth in abundance; and although our winters are severe, they possess their advantages in a social and agricultural point of view; and all that is required for our improvement, is the patronage of our people, and the adoption of the discoveries and approved systems of other countries, whenever and wherever they are applicable.

There is a strong prejudice, and surprising geographical ignorance respecting the American Colonies, with many persons in middling classes of society throughout Great Britain, and our provinces have been a by-word with nurses, who have threatened their squalling children with transportation to them, whilst our bears, and Mohawks, and icicles, have each in turn appalled the

terrified imagination. When I was in England, on one occasion I travelled from London to York; our coach was filled, and after we had been packed by jolting, upon our respective seats, one of my companions, with the Paul Pry-ism peculiar to the inmates of a stage coach, soon discovered that I came from Nova Scotia—and thinking that I was not a native of it, he observed:—a very cold country, Sir; perpetual winter—the trees snap with the frost, and explode like cannons—the people are all savages, with blue noses—talk Mohawk; live in wooden houses, and eat nothing but cod-fish! and he crowned all by asking if Nova-Scotia was not one of the West India Islands—he seemed quite surprised when I told him that I was a specimen of a genuine Blue nose, born in the snapping forests, that my mother tongue was English, and that my nose, like *Gaffer Grey's*, was only blue when the weather was too cold—that we had seed time and harvest, and that few countries possessed more substantial advantages than our provinces; which offer very great inducements, not only to immigrants, but to many persons in easier circumstances of life.

[To be concluded in our next.]

### THE HORSE.

WE particularly direct the attention of our readers to the following observations respecting this useful and noble animal. We shall select extracts from the most approved works of the day, especially from the volume entitled the "*Horse*," in the Library of Useful Knowledge; and whilst we shall endeavour to epitomise, we shall at the same time adopt as much as possible the language of the original writers.—With this acknowledgement and announcement, we shall be prepared against any future imputation of plagiarism. We shall select the most interesting subjects for consideration; especially the general management of the horse, comprehending air, litter, light grooming, exercise, food, water, and management of the feet, shoeing, and a particular enquiry into the diseases of

the horse, comprehending the anatomy of the diseased parts, and the treatment and medicines applicable to them. In the description and treatment of such diseases, we shall refrain as much as possible from professional technicalities, and whenever we are compelled to employ them, we shall explain them, as we wish to diffuse useful information, and to render it easily understood by all descriptions of readers. In concluding this subject, we shall make some general observations upon the "principles of breeding," and upon "draught." Ignorance of proper management, unskillfulness in breaking, and quackery in the treatment of the diseases incident to horses, have all in their turns contributed to spoil, to injure, to ruin, and to kill them. Many excellent animals have been destroyed by the barbarities of those unprincipled pretenders, who employ the knife, the searing-iron, and the most dangerous medicines, equally ignorant of the anatomy of the part, which is the subject of their daring operations, and of the nature of the medicines and structure of the external and internal surfaces, to which they are applied. We shall devote one of our columns immediately to the diseases of horses, and the most approved treatment of them, so that our agricultural friends, who have not access to the best works on this interesting subject, may consult with safety "The New-Brunswick Agriculturist." We shall adopt similar proceedings with respect to all the other tenants of the stable and barn-yard; and as the sale and purchase of a horse is the prolific source of deception, disappointment and litigation, we shall give particular attention to the question of "soundness," and some useful recommendations respecting the purchase and sale of horses.

A proper knowledge of the general management of the horse is of the utmost consequence, not only as respects the prevention of diseases, but also the keeping of the animal in a state of health, strength, and fitness for activity and exertion. Accordingly, we shall in the first place consider the influence of

### AIR

upon the constitution of the horse.

A constant supply of *pure* air is requisite for the life and health of man and beast. Impurities of atmosphere in a stable, and the sudden changes of temperature to which horses are so repeatedly exposed, are frequent causes of fever, rheumatism, catarrh, and inflammation of the lungs. A horse should breathe a pure, cool air, without being subjected to a current of cold wind.—A close atmosphere, particularly that which is occasioned by a number of horses crowded together in a badly ventilated building, is very injurious; it impairs the appetite and weakens the digestion of the horse, and has in many instances generated pestilential diseases. The ceiling of a stable should be twelve feet in height, where circumstances will admit of it, and the stall for each horse at least six feet in width. The common custom of feeding the horse from an opening at the head of his stall, through which the hay is passed from the hay-loft is very objectionable. It causes a cold current of air in winter, which frequently induces cough, catarrh, and inflammations of the eyes and lungs; and moreover, the seed and dust falling from the hay, as the horse raises his head to seize it, is apt to fall into, and injure his eyes. Sudden changes from a cold to a hot, and from a hot to a cold air, are equally improper. The practice, therefore, of clothing horses warmly in winter, and keeping them at the same time in close stables, for the sake of improving the appearance of their coats, is wrong; in the first place, by retarding, or preventing the salutary process of nature, which thickens and increases the coat of the animal, to protect him from the severities of exposure in the winter; and in the second place, by rendering him much more liable to danger, when deprived of his clothing; and taken also from a hot stable into the cold air.—Cleanliness is of the utmost importance in the stable. In the summer, the urine and dung quickly ferment, and give out unwholesome vapours, in some instances producing chronic, or continued

cough, and weakness and inflammation of the eyes. Distemper is frequently produced from such causes, in close stables in the spring and fall of the year.

It is true, we find that the horse, like man, may become familiarised to circumstances entirely at variance with his nature, and that he may live in the "pest-house" of a close and crowded stable without contracting any disease, but, although he may not manifest any outward signs, still we may safely assert, that he does not possess a state of activity and endurance, equal to that which he would have enjoyed, when taken from a pure and well ventilated stable. The vapour from manure heaps, and from other nuisances contiguous to stables, is injurious; indeed, any cause depriving the air in a stable of its purity, either by mixture with, or decomposition of the air itself, should be carefully avoided; for we may here observe, that a sound state of the lungs, is of the utmost importance to this noble animal, subjected, as he is, to the burdens, caprice, and hurry of his owner. The greater number of diseases, with which horses are afflicted, arise from impurities of stables, and careless exposure to sudden changes of temperature. Therefore, much attention should be given to proper ventilation, to the removal of impurities, and to the judicious regulation of clothing and temperature, so as to avoid as much as possible those extremes, which will always jeopard the comfort, health, and constitution of the animal. The farmer can plead no apology for a close, impure, and crowded stable; for he has space and air at his command, and any impurity in his stable argues the imperfection of his agricultural system, and his inattention to composts, which would be benefited by the urine, dung, and vapours, that are so mischievous and hurtful in the stall. It is in livery stables, that the comfort and health of the horse are so often sacrificed to the cupidity of the proprietors of them; and horses are crowded together in these dark and unwholesome dens, deprived of the requisite air, which proper venti-

lation and a better arrangement would furnish. The inn-keeper is the gainer by this impure system, as the horse will not eat his usual quantity of hay; and his owner, after paying for impurity and starvation, returns home with a coughing, feverish, or glandered animal.

The blood of the animal body undergoes an important change in the lungs, through the agency of the air, in the process of respiration. This change is requisite for respiration itself, for digestion, and for the healthy action of all the functions of life. Any cause, therefore, vitiating the purity of the atmosphere, must injure the process of respiration, and consequently the whole animal economy—and hence we see the necessity of wholesome air, and proper ventilation in the arrangement of stables.



#### DISEASES OF THE HORSE.

*The Pulse—Natural number of it—  
Varieties—When it indicates Disease  
—The best place to feel it.*

EVERY farmer, and owner of a horse should have a knowledge of the pulse, sufficient to enable him to distinguish between its healthy and diseased action. This would enable him, in many instances, to check the progress of inflammatory diseases, which would otherwise either destroy the life, or ruin the constitution of the animal. The pulse may be full and strong—hard and contracted—feeble—frequent—or slow, according to the nature and seat of the disease. The beat of the pulse corresponds with the pulsations of the heart, and the varieties shew the effect which disease causes upon this important organ of life. Pulsation is peculiar to the arteries—veins do not pulsate.

"In a state of health, the heart beats in the farmer's horse about 36 times in a minute. In the smaller, and in thorough-bred horses, the pulsations are 40 or 42.—This is the standard pulse." This number may suffer a temporary increase from fear, exercise, or a hot stable. Therefore, before the pulse is counted, the horse should be

soothed and patted, as roughness or loud speaking would quicken the pulse, and lead to an erroneous opinion. A knowledge of the pulsation as respects its hardness, softness, or other varieties, can only be acquired by practice of feeling and careful observation. We may here observe, that this is ascertained by pressing the artery, more or less, strongly against a hard body, as the edge of the jaw bone, and noticing the force with which the blood is sent against the finger during the pulsation.

When the pulse is quickened to 50, or 55, it indicates fever, and urges the necessity of remedies. When it reaches 70 or 75, it indicates great danger; and if it is full and strong, copious bleeding is required. "Few horses long survive a pulse of 100." A quick pulse generally indicates irritation, inflammation, and fever.

A slow pulse, accompanied with drowsiness, indicates accumulation of blood in the head, producing staggers, apoplexy, and diseases "connected with deficiency of nervous energy."

The pulse may be hard, small, and jerking—a contracted stream of blood passing through the artery with force—this indicates great irritation and danger, and is the common symptom of inflammation of the bowels. A *weak* pulse is caused by the feeble action of the heart, and denotes debility. The pulse may be *oppressed*—in this state, the artery is fully distended with blood, but owing to some obstruction in the circulation in some part of the body, the heart labours in forcing the blood along the artery. This occurs in sudden inflammation of the lungs, which are then gorged with blood. In this case, bleeding relieves the oppression of the pulse, by reducing the quantity of blood, whereby the remainder circulates more readily through the lungs; and the pulse becomes increased in frequency and oftentimes in fulness. This increased state of an oppressed pulse, following copious bleeding in inflammation of the lungs, is an important fact, which should always be remembered.

Some farmers and veterinary practi-

tioners place the hand upon the side to count the pulse. They may count the number of the pulsations, but they cannot form any opinion of the other important characters of it. This is best ascertained by gently pressing the artery, called the *submaxillary artery*, as it comes over the edge of the lower jaw-bone, passing upwards to the cheek.—Those who are unacquainted with the exact position of this blood vessel, will soon discover its pulsations, by carrying their forefinger carefully along the inner margin of the bone, commencing 6 or 8 inches from the chin, and passing upwards. The artery is about the size of a quill, and passes round the edge of the jaw, about two inches below the throat.

### HORTICULTURE.

A WELL cultivated garden is a snug farm condensed in a small enclosure—a small edition of a large and valuable work.—The space for manual operation is limited, but the field for scientific enquiry is unbounded.—It is a good testimonial of agricultural character; but it is one, which we are sorry to say, few of our farmers present to the enquiry eye. This seems the more strange, when we bear in mind the profits derived from the garden stuffs, which are taken from an acre of ground. The purse and the palate suffer from this neglect: and much, that ought to go into the pockets of our own agriculturists is paid to speculators in onions, and cabbages from the United States. This is decidedly wrong, and is another among the many instances of apparent apathy and neglect, throughout both provinces. The vegetable market in our city during the summer, presents a miserable exhibition from the garden, and while it proves inattention to this department of husbandry, the prices of produce is a convincing argument, that more might be done to a very great advantage. We cannot subscribe to the objections, which have been urged against gardens, viz: that they occupy too much time. Gardens have been the ground-work of fortunes in the neighbourhood of large towns, and many of the worthy old

Dutch matrons of Long Island, who presided over their neat and well-filled market baskets in New-York, now preside at the table of affluence and splendour in that city. The want of inclination is seldom attended by any want of excuse, and to this we much attribute the prevailing want of gardens throughout the country.

It is a rare thing to meet with any succession of garden stuffs in our markets; a single crop of peas, or beans, or sallads, is considered sufficient. The cultivation of asparagus would be very profitable. This vegetable is brought from Boston, and although injured by the passage, it nevertheless commands a very high price. It has been generally supposed, that the cultivation of it was attended with great trouble and difficulty, but this is not the case. It requires a loose, rich soil; and when once planted, it continues for many years, with very little attention given to it every spring. It grows well in both provinces, and if it was cultivated in the neighbourhood of Saint John, along the rivers, in Digby and Annapolis, it would amply repay the gardener for his trouble. There is domestic economy as well as profit from the proceeds of a garden, and the table of a professed gardener, during the season of his vegetables, affords an illustration of it; therefore economy, comfort, and gain, are all in the balance in favour of horticulture. A garden is furthermore a great ornament to a farm, and the farmer, who observes neatness and management in the cultivation of it, will carry the same disposition and effort to his field. We would, therefore, urge attention to this particular department of husbandry; the country will be improved in appearance by it; the husbandman will be enriched in pocket by it; and the city will give ample encouragement to it.



SUGGESTION FOR AN EXPERIMENTAL  
FARM AT THE EXPENCE OF  
THE PROVINCE.

SEVERAL intelligent farmers and other persons desirous of promoting the

interests of agriculture in this province, have expressed their opinions in favour of the establishment of an experimental farm, at the expence of the province, and that a scientific and practical farmer be procured from Great Britain to conduct it; to try the various agricultural experiments, and to make a regular report upon them. We coincide with the suggestion, and think that an appropriation from the Legislature for this purpose, would be a wise expenditure of a few hundred pounds. Such an establishment would diffuse practical knowledge; it would remove the barrier of prejudice between old customs and modern improvements; it would be an excellent school for the instruction of apprentices and agricultural aspirants; it would establish an era in the agriculture of New-Brunswick, which would be honourable to the Legislature as the patron of it; it would give an impulse to agricultural zeal; it would teach our farmers from the book of nature and experience; and while it would convince them of the errors and inefficiency of their old ways and established habits, it would delight them with those systems of science, which inculcate economy, and lead to profit and improvement. Such an establishment might be under the general direction of suitable persons appointed by the Legislature; and when hereafter it should be no longer required, the farm might be sold and the amount repaid to the province. We think the suggestion worthy the consideration of agriculturists throughout the province. Let them discuss the merits of the question, and urge the advantage and necessity of it upon their Representatives. Such suggestions may appear fanciful at first, and the success of an appeal to the Legislature equally doubtful and hopeless. But if the farmers throughout the province talk the matter among themselves—talk their representatives into their own opinions, unite in their efforts, and persevere in their application; union and perseverance will remove many difficulties.

Such an experiment would soon manifest its beneficial influence not only

in the appearance of our country, but in the appearance of our market; therefore the citizen as well as the farmer is interested in the establishment of it. We submit these few remarks at present, and shall take another opportunity to fill up the outline which we have sketched.



#### GERMINATION AND VEGETATION.

GERMINATION is the process by which a plant begins to grow from its seed. This process commences with the absorption of oxygen by the seed lobes, or cotyledons, the production of carbonic acid gas, and the formation of saccharine matter, which is the first nourishment the plant receives, as it exists in the seed. Water must be present to enable these changes to take place, and the most favourable temperature varies from 55 to 80. Light retards germination. The germ then increases, and the *radicle* descends into the earth to form the roots, whilst the *plumula* ascends to constitute the stem.

Germination cannot take place at a great depth, in consequence of the *absence of oxygen*. Chlorine by facilitating the evolution of oxygen from water, promotes germination.

VEGETATION includes all those processes, by which the growth of the plant is carried on after germination.—They are analogous to those observed in the animal economy.

By ABSORPTION from the soil the roots of plants take up a large share of nutritious matter; they also receive considerable proportion of nourishment through the medium of their leaves, and accordingly they can in many cases be supported in this manner alone. In the latter case the carbon seems to be derived principally, if not entirely, from the carbonic acid of the atmosphere.

By CIRCULATION, the juices of plants are brought to their leaves, and then by a process analogous to respiration, undergo those changes by which they are more particularly fitted to nourish the plant.

By SECRETION the different proximate principles are elaborated from the sap. Light has a very important influence, not only on the colour of plants, but also on the process of respiration, favoring very much the decomposition of carbonic acid, the absorption of carbon, and the elimination of oxygen.

*Reid's Practical Chemistry.*



#### BOTANY.

WE beg to direct the attention of those readers, who are not conversant with the science of Botany to the following extracts from the work of Sir James Edward Smith, M. D., F. R. S. and late President of the Linnæan Society—we shall devote a portion of our paper to this delightful subject, pursuing a course, which we trust will be equally interesting and instructive, and although we shall draw largely from the work already quoted, we shall at the same time add to these extracts from other works of value and celebrity—we shall accordingly endeavour to make an epitome suited to the general reader; and as Botany is an elegant and useful study, we shall commence and continue in regular progression, promising instruction to those who will give it the attention and consideration which it merits. Particles united make aggregates—and these monthly contributions will at the conclusion of a year add an interesting amount to the stock of general knowledge with those who are willing to accumulate it.

“Soft roll your incense Herbs, and Fruits and Flowers

“In mingled clouds to Him, whose Sun exalts  
“Whose breath perfumes you, and whose pencil paints.”

The productions of Nature have been divided into three great classes, called the ANIMAL, the VEGETABLE, and the MINERAL, or FOSSIL Kingdoms: Botany, which is derived from a Greek word signifying grass, and this again from another, signifying to eat, because grass is the chief food of animals most useful to man, is that branch of Natural History which relates to the Vegetable Kingdom.

Animals have an organized structure, which regularly unfolds itself, and is nourished and supported by air and food. They consequently possess life and are subject to Death—they are moreover endowed with sensation, and with spontaneous as well as voluntary motion.

Vegetables are organized, supported by air and food, endowed with life and subject to death as well as animals.—They have in some instances spontaneous motion—they are sensible to the action of nourishment, air, and light, and either thrive or languish according to the wholesome or hurtful application of these stimulants. The familiar application of the withered rose to the fate of human life and beauty, is not more striking to the imagination than philosophically and literally true.

The spontaneous movements of Plants are almost as readily to be observed, as their living principle—the general direction of their branches, and especially of the upper surface of their leaves, (though repeatedly disturbed) to the light—the unfolding and closing of their flowers at stated times, or according to favourable or unfavourable circumstances, with other curious particulars, are actions undoubtedly depending on their vital principle, and are performed with the greater facility in proportion as that principle is in its greatest vigour.—Hence arises a question whether Vegetables are endowed with *Sensation*?

SMITH from whom these extracts are principally made, in answer to the question observes—As they possess life, irritability and motion, spontaneously directing their organs to what is natural and beneficial to them, and flourishing according to their success in satisfying their wants, may not the exercise of their vital Function be attended with some degree of sensation however low, and some consequent share of Happiness?

Such questions involve much speculative enquiry, but they are likely to continue questions for the indulgence of the ingenuity of Theorists.

Some Philosophers have made a lo-

comotive power peculiarly characteristic of Animals, not being aware of the true nature of those half animated beings, called Corals and Corallines, which are fixed as immovably as any plants, to the bottom of the Sea, while indeed many living vegetables swim around them, unattached to the soil, and nourished by the water in which they float. Some have characterised animals as nourished by their *internal*, and vegetables by their *external* surface, the latter having no such thing as an internal stomach—this is tolerably correct, but the proofs of it must fail with respect to those minute and simply constructed animals the Polypes and the Lower tribes of worms, whose feelers put forth into the water, seem scarcely different from roots seeking their food in the Earth, and some of which may be turned inside out, like a glove, without any disturbance of their ordinary functions. Smith says the most satisfactory remark he has for a long time met with on this difficult subject is that of M. MIRBEL, “that plants alone have the power of deriving nourishment though not indeed exclusively from inorganic matter mere earths, salts, or airs, substances certainly incapable of serving as food for any animals, the latter feeding on what is, or has been organized matter, either of a vegetable or, animal nature. So that it should seem to be the office of vegetable life alone to transform dead matter into organized living bodies. The idea appeared so just to Smith, that he has in vain sought for any exception to it. Burning will decide the questions between a Plant, and one of the Lower order of animals. The smell of a burnt bone, coralline, or other animal substance is peculiar, and entirely different from the odour given out by any known vegetable.

The Mineral Kingdom can never be confounded with the other two. Fossils are masses of dead unorganized matter, subject to the Laws of Chemistry alone, increasing by the mechanical addition of extraneous substances or by the Laws of chemical attraction. Their curious crystallization bears some re-

semblance to organization but performs none of its functions: nor is anything like vital principle to be found in this department of nature.

We know the Vital Principle, as we know its Omnipotent Author—by its effects. Living animals and Plants produce Heat. This phenomenon has not been entirely explained upon chemical principles, but in Fossils the production of heat is in most cases tolerably well accounted for. In animals it seems to have the closest connexion with the Vital Energy, which is remarkable in its operation, from our own elaborate frame to the humblest Moss or Fungus. It preserves our complicated machine for sixty, eighty, or a hundred years, while life remains; but no sooner does death happen, than without any alteration of structure, any material change in their material configuration, all is reversed—in the animal, and also in the vegetable Frames. Chemical changes, putrefaction and destruction immediately follow the total privation of life, the importance of which becomes instantly evident, when it is no more.

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#### FORMATION OF AGRICULTURAL SOCIETIES.

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If the farmers throughout the provinces are really desirous to promote their own interests, they should form Agricultural Societies, and co-operate with the Press for the improvement of husbandry. A society should be formed in each county; meetings should be held four times a year; agricultural subjects should be discussed; defective systems exposed and relinquished; improvements urged, and experiments suggested; theory and practice should be directed by science and experience; error and apathy should give way to truth and energy. The societies should communicate with the Editors of the respective agricultural papers—they should send the results of their experiments for publication, when they are calculated to diffuse useful information, or to expose any prevailing error; and when they require information upon any par-

ticular subject, they should submit their questions, that answers, extracted from the most approved agricultural authorities, may be returned through the different agricultural Periodicals for the benefit of all. In this manner, zeal will be kindled and sustained. Farmers will appreciate the importance of their employment, and one of the most rational and delightful pursuits in life, will be elevated to its proper dignity in the provinces. We are aware that societies have been formed in many counties; that they have had an ephemeral existence, and have withered away, leaving little or no record of their utility. The failure was attributable to the want of support. The best efforts of *the Few* will be ineffectual, if *the Many* do not advance in support of them. A similar fate awaits the exertions which individuals are now making in both provinces, if the farmers do not rally around their cause. Indifference will perpetuate ignorance. Energy and union will be rewarded with knowledge and success. Again we urge our agricultural friends to organize societies—to unite, not only with the members of their own societies, but with the other agricultural associations throughout the country;—to make the diffusion of knowledge, and the practice of husbandry upon a scientific basis, their common cause. We shall be happy to receive intelligence of the establishment of such societies, and we will publish it for the information of all concerned. Such proceedings will create notoriety; and many will thus be stimulated to enquiry, and enlisted in the cause.

There is much required to be done; and it is high time that our farmers awoke to a sense of the necessity of doing what has been left undone too long. The agricultural papers which are announced, will be published at a reduced price. Societies ought to devote a small portion of their funds to the purchase of a number of copies, for gratuitous distribution among indigent settlers in their respective districts; for talent is often suppressed for the want of encouragement, and the develop-

ment of the mind, like improvements in the vegetable world, requires cultivation and the excitements of science. There are few, even amongst our most intelligent farmers, so thorough in the science of agriculture, who will not receive some useful information from these PERIODICALS; and there are many who have long required such help, to whom they will impart knowledge, both of a practical and theoretical character.

It may be said, that the conductors of these agricultural papers, are not farmers, and therefore, that they are not competent for the undertaking. It is true, they may not be farmers by profession, but it is not true, that they are therefore incompetent. The science of such papers is extracted from the best agricultural works of the day; they are the vehicles in which the improvements of other countries are carried to the different districts of our own provinces; and it is the duty of our practical farmers to give them increased provincial interest by their practical contributions and suggestions.

The publication of this Periodical, and the importation and purchase of seeds, for the convenience and benefit of farmers, are among the first efforts of the "AGRICULTURAL AND HORTICULTURAL SOCIETY OF THE CITY AND COUNTY OF SAINT JOHN," to promote the interests of husbandry. It calls upon farmers generally for co-operation, and if they respond to the call, organize societies, and unite in their efforts, it will lead to substantial improvements, which will endure, amidst the fluctuations of trade, and the equalizations of timber duties.

In conducting this Periodical, we may here observe, that we propose to devote a large portion of the early numbers to the General Principles of Agriculture; as a *subsoil*, if we may be allowed the metaphor, upon which, those who are unacquainted with them, may rest their practical knowledge, experiments, and suggestions.

We wish "THE NEW-BRUNSWICK AGRICULTURIST" to be a *rudimental* assistance for the young farmer, as well

as a paper of reference for more experienced husbandmen;—and if it meets with sufficient encouragement, we will not only enlarge it, but improve it with lithographed drawings of cattle, implements of husbandry, &c. &c.



[We give insertion to the hints of "ALPHA," respecting the culture of barley, and the sale of grains, with much pleasure, and thank him for his promised communication for our June number.]

For the Agriculturist.

#### HINTS RESPECTING THE CULTURE OF BARLEY.

THE best description of soil for the raising of barley, is a light, sandy, dry soil. Cold, wet, or clay soils are by no means suitable. Care must be taken to have the land well prepared, by dividing and breaking down the clods with light ploughing, cross-ploughing, and harrowing. If this is not carefully attended to, the crop will not grow and ripen equally, which is a great defect. The soil, however, may be too loose; in which case, the grain expends much of its vegetative energy in shooting out roots, instead of stems. When this happens, the action of the roller will be indispensable. The best land to take a barley crop out of, is that after a crop of potatoes or turnips. If it has been properly manured for these crops, it will be unnecessary to expend more manure, as the grain will succeed upon a middling soil better than on highly manured soils. The seed employed, should be raised upon land having a totally different soil from that intended for the immediate crop. In choosing seeds, care should be taken that it is free from blackness, clear, full bodied, free from all mixtures, and particularly free from small seeds.

Barley ought to be sown immediately after the land is wrought; and if it happens to be a dry time, great advantage will be derived from steeping the seed about twenty-four hours before sowing; it will then spring more evenly.

Nothing has given me greater pleasure for a long time past, than to hear that an Agricultural and Horticultural Journal is about to be published in St. John. There is no publication more wanted, or of more value to this province. In the prosperity of agriculture, the Legislature of every country ought to interest itself; for in, and through it alone does a country succeed; and there is no place where it requires more nursing than in this province, where the population is rapidly increasing; and unless the raising of bread and other produce increase with its population, it must undoubtedly continue poor. We have abundance of land in this province, yes, and some as fine land as is in any country; and if our Legislature takes the agriculturist under its fostering care, together with enterprise and industry, we must "go a-head" without fail.

There is one remark, which I should like much to impress upon every one connected with the purchasing and selling all kinds of country produce, that is, the selling by *weight*, in place of the loose manner hitherto adopted. It does not give the industrious farmer a fair chance. You will often see that the man who comes to the market with a light, half cleaned grain, gets about as much for it, as he who brings in a good and well cleaned article. There should be a *standard weight*, and he who brings a poor article, ought to make up the difference in weight, regardless of bulk. The farmer would then find it to his advantage to bring in a good and clean article.

If you think these remarks worthy of insertion in your Journal, I shall, with much pleasure, write another communication for your next number, more fully upon the advantages to be derived from selling produce by weight.

St. John, May, 1841.

ALPHA.

### SOILS.

As soil is the material, upon which the Agriculturist has to operate, it is requisite, that he should understand the nature and varieties of it, to pursue farming upon a scientific, and profitable

system. Soil is defined "to be that layer of loose earthy matter, which constitutes the upper covering of the globe, affords a stratum to the roots of innumerable tribes of vegetables, and supplies them with nourishment to promote their growth, and bring them to maturity." This is termed in agricultural language, the *vegetable soil*, and rests upon an under layer, or stratum, different in its composition, and called the *under-soil* or *subsoil*.—A knowledge of the nature of these soils is of the utmost consequence to the farmer—as in some instances the mixture of the two soils by ploughing, would improve the productiveness of the upper soil, and in others, it would seriously injure it.

Soil is formed from the decomposition and decay of rocks by the agency of heat, frost and rain—the small particles on the surface crumble down, and are acted upon by the air; they thus form a thin layer or bed, for the seeds of a particular vegetable production, called Lichen, which are seen attached to rocks; these again decay, the crust thickens; the seeds of other vegetables, carried by the wind and birds, are deposited upon this new layer, which is further assisted by various animal deposits, and remains, giving fertility to the new made soil. In this manner, soil is formed upon the upper surfaces of the earth—but when this process takes place in less elevated situations, subjected to washing by water, the soil is then taken to other places, and deposited by the stream or flooding, forming low lands. In this manner the rocky girdle of the earth is covered with its different soils, which, notwithstanding the variety of appearances, "is composed almost entirely of four substances, formed by the original union of simple elementary matters. These four substances, washed at a former period from rocks, and called *primitive earths*, are *clay, sand, lime, and magnesia*. It is by due combination of these, that fertility ensues."

Every kind of rock, even of the hardest and most dense nature, is subject

to this change, which converts its surface into soil. In hot climates this process is more rapid, and the decay of vegetable and animal matter forms a richer soil, giving, with the assistance of climate, a greater luxuriance of vegetable growth. In cold countries, the process is slower; and as vegetation is stunted, its contribution in the formation of soil is accordingly diminished, and to this cause we must attribute the difference of depth in the surfaces of soils, in warm and cold countries.

The character of the soil is regulated by the character of the rock, from which it is derived. Thus rocks "in which the prevailing ingredient is silicious earth afford a sandy soil,"—those in which *pure clay*, or *alumina* as it is called, predominates, form a clayey soil. Limestone rocks furnish the calcareous soil. These different substances carried by the current of floods and streams, form with the admixture of animal and vegetable remains the rich and fertile alluvials of different countries.

A moist climate and stagnant waters modify soils—*moorish soils* are formed by the chilling influence of a cold damp climate, in which plants of a coarse and hardy character come to maturity—when they die, the cold retards their decay, "and the soil consists of a mass of half-decayed roots and stems of different species of heath and sedgegrass, with which it is almost entirely occupied. In places where water lodges permanently, a different race of plants is produced." The bog-moss first makes its appearance—a new race of the same species succeeds; other species and plants of a different character find a convenient station in the floating moss, and from the accumulation of innumerable generations of various kinds of vegetables in a state of decomposition, *Peaty* or *Mossy* soil derives its origin.

**SALINE MINERALS** are occasionally mixed with soils—sometimes they have the same origin as the soils themselves, at other times they are dissolved in spring waters, and deposited by them as

they flow over, or filtrate through the soil.

The *subsoil* is sometimes formed by the rock which formed the surface soil; but it more frequently consists of *gravel* or *clay*, or *sand*. The *subsoil* of clay is called *Till*, and consists of a cold, dark, compact substance, which is "so close that no water can sink through it." When this subsoil is covered by a clay, which sometimes happens, it forms one of the worst soils for agricultural operations.

**CLAY**, or as it is sometimes called *alumina*, or argillaceous earth, is easily distinguished. It is compact, absorbs water slowly, and when moistened becomes soft, pliant, tough and tenacious. Its closeness of particles prevents the roots of plants from entering it, and therefore in its ordinary condition, it is one of the worst soils for agricultural purposes. Clay may be improved by mixture with sand, or any other light substance, which will separate its particles. "All kinds of calcareous (lime) manures, ashes, the loose dung swept from the streets of towns, peat, and farm-yard manure, are seceable.—When so improved, they are calculated to yield good crops of beans, wheat, oats, clover, and Swedish turnips.—They likewise answer well for meadow lands or pasturage. Clay soils, ought, if possible, to be ploughed up before winter sets in, in order to expose the furrows to the action of the frost, which mellows and brays down the tenacious clods." \*

**SAND OR GRAVEL**—this is sometimes called *silica*, *silex*, *silicious matter*, or earth of flints. Its character is directly opposed to that of clay. "It has little or no cohesion among its parts; cannot retain moisture; promotes putrefaction; but permits the gases to escape." It is the corrector of clay.

These two earths, clay and sand, are always improved by admixture. E. HUMPHREY DAVY, observes "that the

\* Jackson's Agriculture and Dairy Husbandry—from which, we may here observe, we shall copy freely and copiously.

"term SANDY, should never be applied to any soil that does not contain at least seven-eighths of sand," and "that sandy soils, which effervesce with acids should be called by the name of calcareous sandy soils."

Clay, marl, warp, sea shells, peat and vegetable earth, according to Sir John Sinclair, are the best correctives of sandy soil, and enable it to retain moisture and manure.

The soil in Norfolk, in England, is of a sandy nature, but the farmers, by these means, have converted it into an eminent agricultural country. Indeed, sandy soils, when thus improved, form one of "the most valuable soils that can be worked." Top dressing, with broken down peat, forms an excellent dressing for such soils, which are favourable for the growth of common turnips, potatoes, carrots, barley, rye, buck-wheat, peas, clover, and other grasses.

Droughts easily injure crops on sandy soils, owing to the ready evaporation of moisture from the open particles.—Deep ploughing assists in preventing this evaporation, and retaining a degree of moisture in the deeper earth. The small stones on the surface of such soils assist in retaining moisture; therefore, in dry climates, they ought not to be removed.

Gravelly and sandy soils are treated upon similar principles, the means used being such as will give tenacity and fertility to them. Such soils should have frequent returns of grass crops.

LIME or calcareous earth, is never found in a pure state. It is always combined with acids, especially with the carbonic acid, for which it has a very powerful affinity; attracting it from the atmospheric air.

Burning deprives lime of its carbonic acid; and in this state it absorbs moisture, and again attracts carbonic acid from putrescent animal and vegetable manures—it promotes putrefaction—it fixes the carbonic acid, thus generated, or floating in the air, near the surface of the earth, in the soil; and "it freely imparts this gas, in union with water, for the nourishment of

"plants." It is therefore a most valuable article to the agriculturist, and we shall enter fully into the consideration of it, when we treat of its application as a manure.

Magnesia "is a primitive earth found in some soils, but in a much smaller proportion than the above three. Its properties are nearly analogous to those of lime, but of doubtful value; and it is certainly injurious when mingled in large quantities with the other earths."

Loams, strictly speaking, are not distinct soils, but combinations of clay, sand, or calcareous matter. When clay abounds in them, they are called clayey loams; and when sand preponderates, they are called light, open loams.—These two original ingredients, clay and sand, "seem capable of being compounded in such an infinite variety of ways, as to give occasion to that diversified texture of soils, met with in all countries and in all situations."

The richness of soils is dependent upon the quantity of the putrid relics of organized substances, that have grown and decayed upon them, or have been carried to them in the process of cultivation.

Soils in general are found to contain various chemical compounds, mineral salts, and metallic oxides, some of which are beneficial, others harmless, and some injurious to vegetation.

Experiments have been made by agricultural chemists to discover the constituents of a fertile soil. A good turnip soil, according to Sir Humphrey Davy, "contained eight parts out of nine of silicious sand, and the finely divided matter consisted of:

Carbonate of lime, . . . . .	63
Silicia, . . . . .	15
Alumne, . . . . .	11
Oxide of Iron, . . . . .	3
Vegetable and saline matter, . . . . .	5
Moisture, . . . . .	3

A wheat soil gave three parts in five of silicious sand, and the finely divided matter contained:

Lime, . . . . .	28
Silicia, . . . . .	32
Alumine, . . . . .	29
Animal and vegetable matter } and moisture, }	11

A tolerable crop of turnips has been raised upon a soil containing eleven parts out of twelve of sand. A much greater proportion of sand always produces absolute sterility. Soils differ in colour, being of a dark, or black, or red, or brown, or white colour. The colour indicates the nature of the soil or subsoil. "The best soils are uniform in colour, not mottled."

The reddish appearance in some soils is caused by a combination of iron, but this is not found to impair fertility.—Depth of soil is a matter of importance to the farmer. Shallow soils are unfavourable for the growth of tap or tuber-rooted vegetable. Such soils do not retain a sufficiency of moisture. Deep ploughing, in some instances, remedies this defect.



DAIRY HUSBANDRY.

THE extensive intervals, dyke, and marsh lands of New-Brunswick and Nova-Scotia, with their mountain meadow and pasturage, establish their capabilities for dairy husbandry; which comprehends the judicious selection of dairy stock, the management and feeding of them, and the produce of the dairy, namely: milk, butter and cheese. This frequently forms a regular branch of ordinary farming, but in the vicinity of large towns, it is a distinct pursuit, carried on to a great and profitable extent.

In marketing this produce, it is a matter of importance to please the eye of the buyer, and to preserve the sweetness and good qualities of the articles. This suggests some useful hints, which we shall hereafter submit to the consideration of our agricultural friends in both provinces.

Those who pursue this department of husbandry, should attend to the proper selection of their cows; bearing in

mind, that some cows give a large quantity of milk, having, however, a small quantity of cream; and that others again give a small quantity of milk with a large portion of cream in it. Milks may thus be thin and watery, or good and rich. There is a great variety in the breeds of cows, occasioned by climate, feeding, crossing, and other causes; proceeding, it is supposed, from one original stock. The present breeds in greatest reputation are the OLD YORKSHIRE, a cross between the Tees-water and Hokerness. The LONG-HORNED or Lancaster breed. The SHORT-HORNED or Dutch breed. The MIDDLE-HORNED breeds of Devonshire, Sussex and Hereford. The AYRSHIRE. The ALDERNEY breeds, and GALLOWAY, &c. We shall extract descriptions of these animals from Jackson's Dairy Husbandry.

*The Devonshire Cow.*—A handsome animal, well set upon its legs; strait along the back; small muzzle; generally red; a good feeder, giving a large quantity of milk when well fed and in good pasture.

*The Hereford Cow.*—Broad across the hind quarters; narrow at the sirloin; neck and head well proportioned; horns middle size, and turned up at the points; colour generally deep red; head and breast white. This is considered an excellent cow for milk, and valuable for fattening.

*The Galloway.*—Is well known for its various valuable qualities; is distinguished by the want of horns; broad across the back; a slight curve between the head and quarters; broad at the loins; a fine round body; head moderate size; ears large and rough; chest deep; legs short; clean in the neck; general colour black—this, however, varies. This breed is highly esteemed; arrives soon at maturity; flesh of the best quality; milk excellent in quality, but not abundant in quantity; when fattened, bears journeys well when sent to market. The Suffolk Dun, which is also hornless, is supposed to be a variety of the Galloway.

*The Ayrshire.*—Is the most valua-

ble in Scotland, if not throughout the whole country. Smaller than the foregoing; head small; rather long and narrow at the muzzle;—eyes small, smart, and lively. Horns small crooked, and set at considerable distances from each other;—neck long, rather slender tapering towards the head, with no loose skin below; shoulders thin—forequarters light—hind quarters large; back straight, broad behind—the joints rather loose and open; carcase deep, legs small, short, with firm joints; udder capacious, stretching forward; milk veins large and prominent; teats short, all pointing outwards. Cow very docile; feeds well; easily managed; an excellent dairy cow, but not so good for feeding as the Devon, Sussex, Hereford, and Lancaster breeds. Many of the Ayrshire cows, when properly fed, give from 6 to 8 gallons of milk during part of the summer. The quantity varies from 1½ to 6 gallons during the year. The greatest average quantity for a year has been a thousand gallons, but from 500 to 750 gallons, is considered the general yearly produce in Scotland. Every 2½ gallons of milk will give 1lb. of butter 16 oz. to the lb., and about 26 gallons of milk will give 14lbs. of cheese.

The **SHORT HORNED** or Dutch breed are considered of great value, both for milking and feeding. There are many varieties of these, called by the name of the countries in which they are bred; the best are large in the carcase, well proportioned, broad across the loins, chime full, legs short, head small, but handsome, neck deep, but in keeping with the size of the body, colour generally red and white, or what is called flecked; hide thin; the flesh is thick, close-grained, retaining the juices, and is preferred for use in long voyages, and victualling ships. It has been said that the *short-horned* were bad milchers—but Mr. Dickson, an eminent cattle dealer has proved the contrary, and attributes this character that has been given to them to bad management; for feeding and management may increase the secretion of milk, or the secretion of fat

and formation of flesh, according to the intention of the owner. He thinks that they might be made "*deep milchers.*" This breed has of late years gained credit and demand in England and Scotland as dairy stock.

**THE AYRSHIRE KYLOE.**—This breed is gaining ground above all others throughout the United Kingdom, for *abundant produce in ordinary pasture*, and is considered superior to all others, under similar circumstances, soil and climate, either for the dairy or shambles.

The improved **KERRY COW** is an Irish breed, rather small, hardy, subsists well on scanty pasturage; well adapted for hilly pastures, and poor cottagers; their milk is rich; butter good; and good milkers for their size. Naturally quiet, but when irritated, they are restrained by no ordinary fence. They have been improved of late years by crossing, and they are now thought in many respects, equal to the breeds of England or Scotland.

**THE ALDERNEY and JERSEY** breeds are kept by private gentlemen in Scotland, as dairy cows, owing to the richness of their milk and butter—but the climate does not answer them.

We may here observe, that climate, winters, soil, shelter, and peculiarity of pasturage, all influence the character of dairy cows; and therefore every attention should be paid to render these as favourable as circumstances will admit.

The foregoing descriptions apply to cows influenced by the climate and pasturage of Great Britain, and management of careful owners. In a future number of "*the New-Brunswick Agriculturist*," we shall publish a description of the cattle in our provinces, and a statement of the influence, which our climate, pasturage, and management, has exercised upon the approved breeds which have been imported from Great Britain. Accordingly, we shall feel obliged to any of our agricultural friends who have attended to dairy stock, and feeding cattle for the market, if they would forward us their statements and opinions upon this subject.

(To be continued in our next number.)